The Builder.

No. CCXXXIII.

SATURDAY, JULY 24, 1847.

THE importance which we attach to all matters relating to the drainage of towns, and a consideration of the large powers taken by the new Act, obtained by the Westminster Commission of Sewers, lead us to give our readers the official analysis of this law in full, and to offer some few observations on the subject.

For a long series of years the Westminster Commission pursued a most mistaken course: ignorance (the ignorance of the time, if they please), is apparent in the greater part of their proceedings, and one error was acknowledged and superseded only to make room for another. Their measures for some years appear to have been positively obstructive of good. Impediments, wittingly or unwittingly, were thrown in the way of efficient drainage, and the most arbitrary measures were taken, to enforce compliance with the Wrong which they had set up as the Right. Men were fined heavily for endeavouring to rid themselves of the soil and hurtful impurities, and all were compelled, even where sewers existed, to form, on their premises, a fever and pest depôt, in the shape of a cesspool, and retain therein the elements of disease and death. The worst possible shape of sewers has been insisted on, and by this and the not merely uselessly, but injuriously large size required, the cost was made so enormous as to throw great obstacles in the way of forming new sewers, and in many cases to amount to a total prohibition of all drainage whatever. Thousands of pounds were thus wasted, as well as much good prevented.

Even till very lately, erroneous views reigned in Greek-street, and were defended "to the death:" grave charges were urged against the commission, and their dissolution at one particular moment, seemed more than probable.

Leaving this, however;—until recently, the commission seem never to have considered that they were a *sanatory* board; and when that knowledge did break upon them, they found, and always pleaded in reply to objectors, that their powers were too limited to enable them to act in that respect efficiently. Steps were ultimately taken to increase these powers, and the result is the Act in question, whereof the provisions may be thus stated:—

The commission is to endure for ten years, notwithstanding demise of the Crown, unless repealed.

The orders of the court remain in force until repealed, without any other entry than in the ordinary books registered by the clerk.

A presentment to repair shall not be necessary on each occasion.

The Act has clearly defined the right of the court to pay their officers—to pay expense of witnesses, expense of surveying, planning, and all expenses of working the commission.

The court may agree for the purchase of lands for works and sewers, and all persons under disabilities are empowered to convey, but the commissioners cannot compulsorily take land.

Several defaults may be included in one presentment, and be separately traversed.

All property connected with the commission is declared to be vested in the commissioners.

A summary remedy is given to compel officers of the court to deliver accounts, books, and property.

Possession may be summarily taken of property detained by officers.

Security may be taken from officers.

Fines and forfeitures are not to be estreated into the Exchequer, but are to be levied by the commissioners and applied to the purposes of the commission.

The court may compel parties to pay the expenses of putting in force the orders of the commissioners.

Actions and proceedings may be commenced by or against the clerk as representing the commissioners, but they and the clerk are to be reimbursed, and the clerk may be a witness.

The commissioners may exercise jurisdiction over all places named in the commission, whether the tide ebb or flow there or not; but the commissioners are not compellable to exercise jurisdiction at once if not thought necessary.

No house is hereafter to be built within the jurisdiction of the commissioners unless a sewer be first built as the court shall order; and the sewer is to communicate with such other sewer as the court shall order; but if there be a sewer already near enough, then, instead of a new sewer, a drain may be made into the existing sewer. The expense is to be borne by the owner; but the court may relieve him, in the case of a sewer only, where it may seem just to throw a portion of the cost on the district; and the court may impose a fine on parties contravening the Act.

The Act provides, that no individual shall be required to pay more than after the rate of 20s. per foot for the sewer, according to his frontages; and where a house is wholly unconnected with a public sewer, and at a distance of not less than 200 feet from any public road or other house, the party is not required to make such sewer or drain unless a jury shall present it.

In cases of houses already or hereafter to be built, if they are not properly drained, and if there be a proper sewer within 100 feet, the court may order such house to be drained, by the sewer being continued along the frontage thereof, and by making a drain into it. If there be a sewer already in front, then the court may order a drain to be made into the sewer; and the court may order the owner or occupier of the house in this case to pay a portion of the original cost of the sewer, if built within thirty-five years; and if after twenty-eight days' notice parties shall omit to do so, the court may do the work, and recover the expense by distress.

As to building new sewers, the court is empowered to build sewers where none existed, and to arch over sewers, and to have the contents of the sewers sold, and applied for manure, guarding against any nuisance to the public.

The cost of these new sewers, or the arching over, to be borne by the owners of property according to frontage. The court may charge the owners with the payment of the money by five yearly instalments.

The court may relieve owners from a portion of the expense where the immediate neighbourhood would not require so large a sewer as ought to be built with reference to the public wants.

The expense is to be recovered by distress from the owner or occupier.

Tenants may deduct sums they may have paid, i. e., if a tenant for seven years, he may deduct nine-tenths, and so on in proportion up to thirty-five years, when he may deduct one-fifth, beyond thirty-five years nothing. Tenants under renewable leases are to be considered tenants for the whole term they might acquire. Lessees on lives to be valued. No special contracts are to be affected.

A tenant from year to year is protected against paying more than the rent due from him, unless he refuse to disclose name and address of landlord.

The court must give notice of making new sewers where none existed before, for twenty-eight days where the estimate shall exceed 300*l*.

The court may borrow money for works, and charge all property to be benefited with the repayment. The money must be repaid within fourteen years by equal annual or shorter instalments with interest, and the exchequer bill loan commissioners are authorized to lend money.

The court may summon parties to show cause why private grounds are not properly drained. On refusal, a jury may be called out, and the party be ordered to build a sewer, with power to relieve him according to the benefit his building may confer on the district. The court may do the work and levy the expense on the party. Parties are to be exempt from this obligation if their property be at a distance of 200 feet from any public road or houses, unless a jury shall think it expedient to bring it under the operation of the Act.

The commissioners and officers, for view and for their works, may pass over lands, making compensation.

The court may abandon old sewers and make new ones.

The court may abate nuisance from stagnant pools, or any thing likely to prejudice the public health. The offenders are to be summoned; and if they do not remove the nuisance by building a proper sewer or otherwise, a jury may be called out, who may fine equal to the cost of getting rid of the nuisance and proper works. On default, the court may do the work, and levy the expense on the party failing. A portion of the expense of new works, where beneficial to it, may be thrown on the district.

Notice of making new drains into sewers must be given to the court; the building thereof to be regulated by the court. In default, the court may demolish any drain, and levy the expense.

If the court build the drain, 10s. only may be charged for the first 3 feet and the entry into the sewer.

All drains are to be under the survey of the court and its officers. The owners are to cleanse and repair them; and on failure, if complaint be made, notice may be given by the officer to parties to cleanse and repair. On failure, the court may order it to be done, and then fine the party if he refuse.

The court is empowered to raise or alter walls or banks of streams.

A special court may be summoned by six commissioners out of court in case of emergency.

No commissioner interested in a question is to vote.

The commissioners are protected against personal liability when acting *bonâ fide*.

The court may rate property without naming the owner, where he is unknown.

The earlier statutes of sewers are to remain in force except where repugnant to this Act.

It will be seen that the powers of the commission are now very great:—all drains, culverts, watercourses, cesspools, and other matters relating to drainage, are put under the control of the commission.

No house is to be built without the previous construction of a sewer, unless at the distance of not less than 200 feet from any public road or other house! Owners of houses already built, if within 100 feet of a proper sewer, may be compelled to continue the sewer; and the commissioners may themselves build sewers where none exist, and recover the cost from the owners of the property abutting thereon by distress, as well as levy fines.

The Act gives the commissioners a discretionary power,—they may, or may not, exercise jurisdiction,—and we would urge upon them the expediency and importance of acting with the greatest care, moderation, and judgment. They have now the means of doing much good, but they have also the power in their hands of producing great inconvenience and annoyance to individuals, and of raising such an outcry against the law as may tend materially to impede other sanatorial measures. We call upon them, then, to exercise their powers in so careful and tolerant a manner as to prove themselves worthy of the great trust reposed in them; while, at the same time, we would strongly urge on owners and builders, within the limits of the Act, the value of its provisions, and the necessity and general advantage of carrying them out efficiently.

The commissioners must do all in their power *to reduce the cost of drainage and improve the mode*,—the question both of size and material must again engage their attention, and receive the most serious and intelligent consideration.*

* The following communication to us is interesting in connection with this inquiry:—

"*City of Chester.*"—Small egg-shaped tubular sewer, and traps, composed of terra cotta or fire clay, have been recently introduced into this city. The sewer is 20 inches high, 15 inches across in widest part, and 2 inches thick, and it is both effective and exceedingly economical, costing only 4s. per lineal yard; the traps are 6s. each. For the idea of the sewer we are indebted to the recommendations of Mr. Guthrie in a former number of this journal, but he suggested that it should be moulded in sections, but this was found a practice so inconvenient and objectionable, in consequence of the warping of the clay in the process of burning, that it was abandoned, and tubes moulded of the egg-shape, and in lengths of two feet, were adopted in its stead. House-drains 9 inches diameter are also recommended of the same shape (that advised by Mr. Hawksley, in the reports of the Health of Towns' Commission) and similar material, one inch in thickness.

The tubes are fitted together without sockets, and merely abut against each other; this enables the drain to be examined without destroying the tubes, which it is necessary to do under the old system, and it also allows the moisture in the earth above to percolate into them, similar to the system of drainage of land for agricultural purposes. [We do not think this desirable]. Sewers can be made of this material from 15 inches to 18 and 20 inches diameter, with corresponding altitudes: these are sufficiently large for most of the smaller streets of provincial towns, and if a proper fall be given them, they will effectually cleanse themselves.

By the adoption of this system, the sanatory condition of many of our small provincial towns, and indeed some parts of our larger ones, may be speedily improved, and at a comparatively trifling expense, in comparison, we mean, with the costly works constructed around us.

We cannot believe that the public in general are sincere in their

We append to our present remarks a report of the proceedings at the last meeting of the commissioners, as they bear chiefly on the matter in question.

A court was held on Friday, the 16th inst.; Capt. Bague in the chair. Relative to the "Act to explain and amend the laws of sewers relating to the city and liberty of Westminster, and part of Middlesex," of which we have been speaking, it was resolved, on the suggestion of the solicitor, that as it was now required by it that no houses should be built unless a sewer to carry off the drainage thereof be first constructed, advertisements should be inserted in the newspapers to inform all builders and owners of property of the heavy penalties to which they will be subject in neglecting the provisions of this Act.

Mr. Willoughby then rose to bring before the court, the motion of which notice had been given, viz., "That the court consider as to appointing a committee to consider of the best means of carrying into operation the provisions of the new Act, or as to the most convenient mode of making the proper arrangements towards the discharge of the enlarged functions now imposed on the court." In doing which he said, that as the Act had received the royal assent, it was their duty to take steps as to the best mode of carrying it into effect. The court had never before been invested with powers adequate and applicable to the wants of the community. He trusted they would do nothing hastily, but carry out the Act discreetly, cautiously, and wisely, with advantage to the public and credit to themselves. He thought the best course was to refer the whole question to a committee, and thereby have a well-considered scheme that might form the base for future discussion.

A commissioner having inquired if it was proposed to have an open committee or a select one, the mover said he had certainly not contemplated an open committee, believing it would be better to refer the question to some five or six members than to leave it to the whole court, where propositions might be brought forward on the moment without having received due consideration. At the same time he was favourable to the fullest discussion of the whole subject after the committee had made their report.

Mr. Le Breton objected to the course proposed, and hoped that all would be open, fair, and above-board; and in the mode in which the bill was carried, when there were no committees and no secret proceedings. It would be in the recollection of hon. gentlemen, that the bill was gone through, clause by clause, in open court, and opinions elicited, which opinions had since become the law of the land. He hoped they would carry it out in open court, without reference to committees, select or otherwise.

Mr. J. White was in favour of a special court being called, to take the whole question into consideration, but to let all be done fairly and openly, and before the public at large.—Mr. Baylis concurred in the opinion of Mr. White.—Mr. W. Donaldson was surprised at the objection to the appointment of a committee. He should support the motion.—Mr. Brown thought the whole affair might be best brought before the court by the appointment of a committee.—Mr. Cumberlege said, before the Act passed, the bill was discussed in open court. He therefore supported the motion for the proceedings being open.

A division being called for, the room was ordered to be cleared, when there appeared—

For the motion	16
Against it	16

The chairman, thus becoming the arbiter of the matter, gave his vote in favour of the proceedings by open court.

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agitation of sanatory reform, unless they bestir themselves with energy and exertion in setting their respective towns "in order" by improved drainage (as suggested at so cheap a rate), paving, flagging, and cleansing, and a cheap supply of water and gas. These are subjects of momentous importance to all of us, and the expense of which would soon be repaid by the reduction of the local taxation (*in poor rates*), and the better health we should enjoy in the bosoms of our families. The Health of Towns Bill having been withdrawn for this session, we trust, on its introduction in an amended form next session, that clauses will be re-introduced to repeal the window-tax and the tax on glass, as the lack of light and ventilation are some of the greatest curses our cottage population are labouring under. Instead of levying taxes that stop up the windows of our houses, which obstruct the light and air of heaven, we would tax those that failed to put a sufficient number in their houses, and who therefore neglected the laws of ventilation and health. The window-tax is a tax of such an odious and barbarous character, that it is totally unworthy of a country that boasts so much of its civilization. B. B.

A communication was received from the Westminster Improvement Commissioners, as as to the new mode of drainage from Vauxhall-road to New Victoria-street. The surveyor approved of the plan, and said the proposed work would form the base of the improvements of the entire city of Westminster. The surveyor was instructed to confer with Mr. Abraham, the architect to the Westminster Improvement Commissioners, on the subject.

A letter was read from Messrs. Elliott, the brewers, in which those gentlemen stated that it was their wish, as the King's Scholars' Pond sewer was now being partly arched over, that this desirable improvement should be continued from the Vauxhall-bridge road to Pimlico, and that they were willing to subscribe 450*l.*, or 15*s.* per foot, as their share of the expense. The court considered it a liberal offer, and acceded on their part to the terms specified. It was also ordered that advertisements for tenders for the performance of the work should be immediately issued, to be received at the next court.

ON THE NATURE, OBJECTS, AND INSTRUCTION OF SCHOOLS OF DESIGN.

THE following is the letter to Mr. Shaw Lefevre, referred to in our last week's paper:—

"38, Arlington-street, Camden Town.

SIR,—In stating, at your request, my opinions on schools of design, I think it necessary to explain any terms which I may have occasion to use in a more special and limited sense than as they are ordinarily employed. The two most important of these are *industrial* and *artistic*. By *industry*, I do not mean simple labour, but any process by which raw materials are converted into objects of convenience or utility; and by *art*, such exertions of the inventive or combining powers as will produce objects calculated to suggest ideas of sublimity or beauty. These definitions, though a little vague, will be, I apprehend, sufficiently accurate for present purposes; and I may, therefore, take it as understood, that the primary object of industrial production is physical usefulness; and of artistic production, mental excitement.

In order to determine what an education in design should be, we must first endeavour to form some notion of what design itself is; until we have settled the end to be attained, it is worse than useless to discuss the means of attainment. The purpose of design is to superadd to the utility of industrial productions such artistic decoration as, without destroying their usefulness, will render them pleasing to that mental faculty, or rather that combination of mental faculties known by the name of taste. Design, then, in its nature is both industrial and artistic, and its industrial elements are the more numerous and more important of the two.

Before any consideration of art arises, the designer must know the *amount* of decoration that the materials with which he has to deal are capable of receiving, and the *kind* of decoration suited to the purposes to which the article produced is about to be applied. Design, taught without any reference to capability of materials and appropriateness of purpose, is even more ridiculous than the establishment of a manufactory for ruffles in a country where people are unacquainted with shirts.

Every artist receives an industrial education: the painter learns the art of mixing and combining colours so as to produce varieties of tints; the sculptor learns how to wield the hammer and chisel; but there is this difference between the artist and the designer, that the artist himself realizes his own conceptions, while the conceptions of the designer are only realized by the intervention of the manufacturer. Hence, though designers, such as Flaxman, have risen to be great artists, it is one of the rarest things in the world to find an artist producing a good and practicable design. Cartoons, of course, must be excepted, and perhaps arabesques; but these have, after all, very little relation to the works likely to be demanded from the designers suited to a large manufacturing country.

It does so happen that convenience and beauty are often very closely allied; and this alliance is pointed out by mathematical science. The curves of the conic section applied to vessels of capacity, for instance, give us at once the most graceful forms and the most capacious articles. In all architectural designs there is an absolute necessity for perfect horizontal level and perfect perpendicular elevation. People have found beauty in the leaning tower of Pisa; but I nearly found my death in the leaning wall of a cottage: and I doubt whether any beauty of oblique angles would afford consolation to ghosts. Some of the most effective patterns in silks, produced this year at Paris, were geometric combinations of straight lines. Some knowledge of mathematics is, therefore, essential to successful design; and it is even of more importance than the highest excellence of pictorial art, because stability is more of a primary consideration than mere ornament.

An artist, of course, has nothing to do with any such mechanical considerations as stability or convenience; but unless a designer works for mechanics, he had much better not work at all. We go to artists for pictures; but we go to designers for tea-pots; and the best figure-drawing in the world would console very few of us for having our breakfasts spoiled. The *ornamental* comes *after the useful*. Giving exclusive prominence to the ornamental leads only to the production of the useless, a species of production which, in my opinion, does not require or deserve national encouragement.

A designer, I grant, is neither a machine-maker nor a machine-worker, but he is a machine-user, and therefore he can never know his business well without some knowledge both of mechanical science, or, as I may call it, dynamics, and also of the practical working of machinery. But, to make this knowledge complete, there should be added to it the elements of statics, for questions of equilibrium very often arise in discussing the composition of forces. I may be told that these have no relation to art; but I beg it to be understood, that I am writing on the education of designers and not on the education of artists. Flower patterns are among the most common and popular forms of design, and a knowledge of botany is absolutely necessary to their effective production. I have seen groups produced by English designers in which the flowers of spring and autumn were absurdly blended, the natural characteristics of the plants utterly lost, and the harmonies of nature, which art may imitate but cannot mend, thereby effectually destroyed. The climbing of the convolvulus affords an admirable archetype for patterns, and has, therefore, been often copied in design; but one sticks on his convolvulus stem the flowers of the ranunculus, and another gives to the climbing plant the form of prehension which belongs only to the creeping or the pendant plant. The blunders of this kind are without number—

> . . . "Velut ægri somnia, vanæ
> Finguntur species: ut nec pes, nec caput uni
> Reddatur formæ."

For these *vanæ species* I would venture to propose the *species* and *genera* of natural science—that is, of NATURE herself, sciences being merely the classification of observed facts.

Some portion of zoology would be useful, for in many designs animal forms are introduced, and, what is not less important, animal substances supply many of the materials on which design is to be exercised.

But no science is of more importance to the designer than chemistry; and in no department of science is England more defective than in the chemistry of colour. I must, however, make an exception in favour of our porcelain manufacture, which has within the last few years outstripped the production of Dresden and Sevres. Now, a designer making a pattern without knowing the means by which the shades he introduces can be realised, is almost certain to go astray. All the designers for silk at Lyons are excellent chemists; they have for the most part been educated at the admirable school at La Martiniere, where a very extensive and practical industrial course precedes, and is made the basis of, artistic instruction. One of the best designers, in his particular department, in England, is Mr. Battam, the artist to the pottery and porcelain works of Messrs. Copeland and Garratt. He is not only well acquainted with the chemistry of colour, and the effects produced on his material by firing, but he has also studied the combinations best suited to produce the porce-

lain base which is to receive his artistic decoration. In fact, he has discovered some new combinations, which greatly extend the range and application of the products of the fictile art.

Mr. Hammersley, the master of the Nottingham School of Design, may be mentioned as an example of the value of industrial education to an artist of design. He was originally a designer for the potteries; and as he resided on the spot, he had at once to apply his patterns to the products. It was on this practical and mechanical knowledge that he raised the superstructure of his art; and he has profited by experience; for on his appointment to Nottingham, he set himself to study the nature and principles of lace manufacture, without a knowledge of which it would be impossible for him to discover how art could be applied to the fabric.

In art proper, England is decidedly superior to France. No one could entertain a doubt on the subject who compared the last year's exhibition in Trafalgar-square, with the melancholy acres of painted canvas displayed about the same time at the Louvre. It is not improbable that our designers would come very near those of France *on paper;* but most assuredly the French would produce ten workable and working patterns for our one.

Even viewed artistically, there are some obvious and essential differences between a design and a painting. A painting is designed to suggest,—a pattern to produce direct impression; a painting may be allowed to gain upon you and grow upon you,—a pattern, unless it strikes at once, is an absolute failure. Design, therefore, is necessarily dramatic; and hence the histrionic character, which is the great defect in the French school of painting, is the great merit of their school of design.

So long as the school in Somerset-house is confined to artistic instruction, it is not a school of design, but a school of low art,—a place for training candidates for rejection by the Royal Academy. Artists ought to have a share, and a very important one, in the training of designers; but they neither can nor will give them the kind of instruction most essential to their success, and that is, a knowledge of the elements from which design must be framed, and of the means by which it is to be realized.

It is certainly of importance that taste should be cultivated in the designer, but not until the powers which combine to form taste have been developed and rightly directed. Give the designer the industrial portion of his education, and then let him have as much of the highest art as he has either capacity or opportunity for receiving. Design differs from high art not merely in degree, but *in kind;* for design includes *contrivance*, with which art has nothing whatever to do. A beautiful picture would be a very bad pattern, in ninety-nine cases out of the hundred.

A designer has to invent; and the power of inventing requires that the *mental faculties* should be developed by *general knowledge*. It needs not to dwell an instant longer on so palpable a truth.

A school of design then is a school of arts and manufactures; not a school of art, in the singular number, without any reference to manufactures, singular or plural. Design is properly a part of industrial education; but severed from industry, it is nothing more than

Extinctæ corpus inutile dextræ.

If it be desirable to have a school of design distinct from the school of arts and manufactures—which I do not deny—it should only be open to those who had completed their industrial courses, and manifested such a taste for design as might seem worthy of further development and cultivation. For such students, one room set apart in the general school would probably be found amply sufficient.

I have stated my opinions at greater length than I intended; they are the results of observation and experience in the factories and workshops, as well as the schools, of England and France. The schools of England err fundamentally; they are based on the supposition that design is a lower grade of art. I contend that design is a very different thing from any of what are called the fine arts; and I point out the important element of difference in the one comprehensive word *contrivance*. I grant that some knowledge of the fine arts is an element of design, and I am as anxious as any one can be to make that element as perfect as possible. But still, such knowledge is only one element out of many: I doubt whether it is an element which ought to predominate; and I am very certain that it cannot safely be allowed to exclude all the rest.

It would be absurd in me to recommend amendments and improvements, when my objections apply to an entire system. I want to see schools of arts and manufactures in which design shall form an essential part of the course of instruction. I desire to see these schools under the joint government of the Board of Trade, the Council of Education, and local authorities, except the central school, which ought to be placed directly under the Government, without the intervention of any irresponsible council or committee. Each school of design now existing in the country affords a nucleus for a school of arts and manufactures, without disturbing any body, or displacing any body. Retain all your paid staff; you will want every one of them: get rid of the *unpaid;* for no economic aphorism is more true than this, 'Whatever Government gets done for nothing, is generally very dear at the price.' Do not contemptuously neglect, or affect to despise, mechanical details and commercial considerations, in discussing the matter. St. Paul's advice had a wider scope than religion, when he said, 'Despise not the day of small things.' In devising schemes for the improvement of design, let not the artizan be forgotten in the artist—you may be assured that a good bricklayer has a greater national, and a greater market value, than a bad painter.

W. Cooke Taylor."

THE CONSTRUCTIVE SCIENCES AT KING'S COLLEGE, LONDON.

In King's College, as at the London University, the classes for the study of the arts of construction and architecture, under Professor Hosking, are making satisfactory progress. The course of instruction now pursued there is this:—At the October commencement, the professor introduces the subject of construction generally to students of all years; and throughout the term so commenced the assistant professor, Mr. A. Moseley, teaches the simpler elements to those of the students who are in their second and third years, and concludes by an examination, the result of which enables the professor to judge what information the students have acquired during that term. In the terms from Christmas to Midsummer, Mr. Moseley confines himself to surveying and estimating, and Professor Hosking goes through the subject of the arts of construction in connection with civil engineering and architecture generally, to the same second and third years' men; and at the conclusion, that is, in the last week in June, examines the third year's men upon the whole subject, and awards a prize to that student who gives the best answers to the inquiries. Those students who return for the third year have thus the whole course twice over, and alone come up for final examination.

At the last examination, the prize was awarded to Mr. Nunn.

TEA-GARDEN ARCHITECTURE.

A "Young Architect" has addressed a letter to us, setting forth how that he and other students, flighty rogues, were led, by a flowery description in a morning newspaper, of a beautiful gothic hall, erected as a refreshment-room in a popular place of resort a short distance from London, to travel there at certain cost in time and money. And further, how that when they reached the *locus in quo*, it turned out to be a "a flimsy, vulgar, unsubstantial affair, as little like the hall at Eltham, to which the said morning paper had gravely compared it, as the station of the Great Western Railway at Paddington is to St. Paul's." He continues, "I will briefly mention what I saw:—A large low structure, with a very flat roof, perforated with skylights; two large doors at either end; the roof supported by two rows of short slight wooden pillars; against these were affixed thin pieces of mirrors, at the end of which were boards cut into a curved shape, with mouldings and paintings on them; the windows in the walls were few, and those not Gothic; no louvre, no fine old gallery or screen; no oriels; nothing, in short, belonging to antiquity."

Although scarcely worth mentioning, and his statement satisfies us he must be a *very* "young architect" to expect any thing better, we notice his objection because we agree with him in this, that praise of such a structure, on such grounds, by a respectable journal, while it is an evidence of the want of architectural knowledge generally, is calculated to do injury, and should be reprobated. We propose peeping at one or two places of public resort, which make claim for architectural decorations, before long.

THE STATUE OF HER MAJESTY, BY GIBSON.
THE NEW CROWN PIECE, BY WYON.

These two novel works of art have been much praised by periodical critics; but they have not been fairly and properly reviewed, as regards their historical and national import. Let us briefly notice them with reference to their truthfulness, and to the effects they are calculated to make on the mind of the rising generation of artists, and of future historians and critics. If the *Statue* of *Victoria* was exhibited in any museum or gallery of Europe, without an inscription, or explanation, could any spectator fancy it to be a portraiture of the present amiable Queen of England. Was she ever seen, or is she likely to be seen, clothed in such amplitude of mantle,—with such sandals,—with such a tiara on the head, and such wreath and scroll in her hands? If not, what can justify the artist to chisel such things in marble, as part and parcel of the statue of a female, and affix the name, Victoria Regina, to the mass?

If the biographer or historian were to describe our most gracious Queen, as appearing at court, in the senate, or on horseback, in such costume, would the account be tolerated? Would it not seem like caricature? and would not the writer be reprobated and condemned, as faithless and false; as indicating an imaginary rather than a real personage? Besides, we know that the Greeks, in making their famed statues, busts, bassi-relievi, &c., copied and rendered permanent the portraitures of their emperors, senators, heroes, and females, not merely in personal features, but in costume and all other accessories. They did not clothe an Alexander, or a Pericles, in the dress of the Egyptians, but in that of the age in which they respectively lived. The Roman artists did the same, whence the best works of both nations are justly regarded as authorities, as historical data, for description and criticism. We are also in the habit of referring to the sculptures, the paintings, the medals, and coins of the middle ages, as guides and evidences for costume, implements, weapons, and other personal details; but if artists are tolerated and *encouraged* to produce statues and pictures of illustrious and eminent British personages of the nineteenth century, in the habits, &c., of the Egyptians, the Greeks, or the Romans, who lived centuries ago, we shall lose all identity of persons, time, and of authenticity.

The late Mr. West set a most praiseworthy example in historical pictures, as Chantrey did in sculpture, of an earnest and laudable endeavour to make art both historical and biographical, and thus calculated to represent the hero, the statesman, the philosopher, the poet, &c., in a dress which truly belonged to him, in a costume which seemed to mark the age and country in which either of those personages lived, and which would at once contra-distinguish him or her from another person of a distinct age and remote nation. These sentiments were often reiterated in my ears by the two eminent artists alluded to, and were, and are, so indelibly impressed on my mind that they can never be effaced,—nor can any fascination of art reconcile me to approve and admire a work that is opposed to the principle. In making these remarks on *Gibson's* fine and, as it may be called, classical statue, I do not wish to depreciate it as a work of high art, of great beauty, of eminent talent; but I must enter an unqualified protest against its being called and regarded as a portraiture of the illustrious, exemplary, and estimable living female monarch of Great Britain.

The Crown Piece, by Mr. William Wyon, R.A., is a beautiful specimen of coin engraving, and creditable to the artist and to the country; but I cannot help regretting that it should be disfigured by a practice that "would be more honoured in the breach than the observance:" the inscription in the old abbreviated *Latin*. Have we a language of our own? is it copious, precise, expressive? or are we ashamed of it? Is not an *English* coin, as well as an English Act of Parliament, intended to be used by, and made for the English people? Or is the Latin language the vernacular idiom of the country? If not, why employ it in the laws and on coins of the realm, which ought to be known to, and duly valued and understood by every person, whether rich, or poor, learned, or illiterate? But custom, common-place prejudice, govern or hood-wink too many, even of the thinking portion of society. "The diffusion of knowledge" has done much towards dispelling these clouds, improving the general intellect, and it will ultimately, I hope soon, correct the errors and absurdities here complained of. As the poet Crabbe has properly said "the *dead* languages ought to be *buried*." J. Britton.

July 22, 1847.

EDUCATION FOR CIVIL ENGINEERS.

The objects which the College of Civil Engineers at Putney has in view;—namely, "To provide for the rising generation a means of obtaining instruction in sound scientific principles, while at the same time they are acquiring that knowledge which practice alone can impart," is so important to the great interests of the country as to claim our attention in a considerable degree; and lead us, without pledging ourselves to the excellence of all the details of the plan adopted, to give publicity to the views of the directors, as set forth in the address of the Principal, referred to last week. No one can deny that, "it is a wise and patriotic endeavour to provide, for those who wish to make engineering their profession, means of acquiring that sound knowledge without which immense and valuable undertakings are exposed to be ruined by the rash schemes of ignorant pretenders, or the mismanagement of those who depend only upon mere blind technical rules, without power to adapt them to altered circumstances."

"To know how a bridge, which is to carry a certain load, should be constructed, is entirely within the province of the scientific man. He takes the data of the experience of the past, and knowing the laws that govern the resistance of matter, he can say with confidence, 'this design, if carefully and faithfully executed, will answer the purpose.' There is no room for difference of opinion. The laws of mechanics admit of no doubt. How is it then that we find architects and engineers contradicting one another on the plainest point? on questions the calculation of which is easy to any who know the elements of statistics? How is it, that in cases of failure occurring so frequently, the authorities appealed to express opinions so widely different? I firmly believe it to be because these authorities are only, in most cases, those of *practical* men, who know not the laws of the results which they have witnessed in the course of their professional experience; and not knowing these immutable laws, they are apt to generalize falsely, and apply to particular instances their general rule, without discriminating efficiently between the *data*.

I am alluding to cases which have occurred within the last twelve months, and which to professional men will readily suggest themselves, and I think it a matter for serious consideration on the part of her Majesty's Government, whether or no engineers to whom is now entrusted the lives, and limbs, and property of her Majesty's subjects, shall be allowed to exercise their valuable and important profession without some guarantee to the public, that those who undertake to do so have really had such education and preparation for their duties as shall enable them to perform them with advantage to the public, and a due regard to the welfare of the country. A time must come when an authorized board shall be appointed to examine persons who wish to exercise the profession, and then it *must* be a *sine qud non*, that the candidates shall shew an intimate acquaintance with the properties of matter, and the natural laws of mechanics. Such a knowledge it is our constant object to give in this college, but inasmuch as we know that knowledge without practice is not ready and available, we also place this latter most important requisite within reach of the student.

The experience of past ages of the civil engineer and the contractor is also brought before the students; they visit railways and public works in course of construction, and then see the operations of which they read, and of which plans and explanations have been given; they see these operations being carried out. Our system is not to give theoretical instruction alone, but to give practical along with it. We manufacture machinery; we have constantly pattern-makers, fitters, vice-men, moulders, and smiths at work on the premises, executing works such as may be seen in the more extensive workshops of our chief engineers, and thereby we supply them with the knowledge that actual practice gives, while, at the same time, we also give, what could not be done in a large manufactory, constant instruction to each individual in the principles which guide these operations, and urge the students, by industrious application, to master both the practice and the principle, both the experimental facts and the theoretical truths; and thus we endeavour to remedy that wherein we conceive that engineering education has been hitherto defective.

Objections are made to the college sometimes on one ground, sometimes on another.

"You cannot make men engineers by mere theory," says one. No doubt of it; we do not pretend to do any such thing; we wish to give theory in addition to practice, not theory alone. We say, engineers ought to be men whose operations are conducted on certain principles. Those operations should not be merely tentative; we wish to supply the exact, positive, undeviating laws of mechanics; to give the student that confidence which science alone can give, that his unskilful attempts may not be the cause of death, or mutilation, to others. Engineers should be scientific men, as well as practical, and science is not acquired so easily as a scientific reputation is.

Again, when some of those who have been educated within our walls have gone forth into the world, they have been tried and found incompetent.

This is very possible; we are not so foolish as to think that mere residence in a college gives knowledge. I must particularly request our engineering friends to give me their attention when I allude to the matter. They should not judge the college by any of our students, unless these latter bring certificates of their competency from the college authorities. I, for my part, emphatically and distinctly disclaim any responsibility whatever for those who leave the college without certificates, countersigned by myself, and, on the other hand, I will venture to defy any engineer to convict a student of incompetency who has been so recommended. I am confident that during my direction of the college, none have received certificates without searching examination, and I am fully convinced that they have been competent to undertake such work as might fairly be intrusted to young men, with certainty of giving satisfaction to their employers."

PARIS.

The *Moniteur des Architectes* says that the church of Notre Dame has been furnished with lightning conductors, and expresses a hope that this precaution will be adopted generally throughout France.——A model of a design for a subterranean street between two leading railways is being exhibited at the *Palais Bourbon*.——Some curious discoveries have been made in lowering the Rue *François Miron*, including a number of tombs, some in plaster, belonging to the fifteenth and sixteenth centuries, and others in stone of much earlier date.——The cupola of the *Salle des Pas Perdus*, at the *Palais de Justice*, is giving way. It appears certain that the evil is great, and that very considerable works are necessary. It is attributed to the failure of the foundations in part.——A complete renumbering of all the houses and buildings in Paris is to be immediately commenced, they say; it is to be done by means of plates of enamel, with white figures on a blue ground.

RAILWAY JOTTINGS.

A project of law to expel railway directors from the French Chambers has been introduced by M. Cremieux, and referred to a committee.——A verdict of 800*l.* damages has been awarded by jury for injuries sustained by a Mr. Bromley and his wife on the Eastern Counties line, on 18th July last.——The jury in their late verdict against Fossey for the Wolverton collision, declared that two attendants were necessary at the siding, instead of one alone.——It is but fair to record, however, that the Wolverton accident is said to be the first that has occurred, on that part of what is now called the London and North-Western, for nineteen years, during which time 'the company,' namely, the London and North-Western, have carried 35,000,000 passengers along this line,—an enumeration, however, which looks a little like an attempt to throw dust into the public eye. The number of servants employed by the same company is said to be 6,418, exclusive of plate-layers.—— The *Sheffield Iris* describes an Itinerarium, or railway compass, to ensure more punctuality on railways, and thus, also, to aid materially in the prevention of accidents. It will at all times shew to the engineer the speed of the engine, the distance to the next station, and the exact position on the line, which will be useful at night, or in foggy weather. There is a chronometer, which will, of course, shew the railway time. It will also register on paper a description of the journey, that is, the time occupied at each station and during the journey, and the exact speed travelled during every mile. Several trips on the Manchester and Leeds have tested its utility.—The daily expenses of the Great Western in the present Parliament have been estimated at 4,500*l.* a day, or 30,000*l.* a week.——The repairs required for the Dorchester Tunnel, says the *Hampshire Advertiser*, turn out to be far more formidable than was at first acknowledged, and the report of Mr. M'Adam, as to the danger of the traffic being opened through it for a considerable time to come, has compelled a deference to the public safety. The repairs are proceeding, therefore, with due caution, and it will be a long period before the tunnel will be re-opened.——That part of the new bridge under the turnpike road leading from Dudley to Birmingham, near Dudley Castle, says the *Worcester Journal*, and under which the Oxford, Worcester, and Wolverhampton line will pass, has been repaired since it fell in, and the workmen are now employed in removing the earth from off the sides of the two ends of the bridge, on to the centre of the arch, for the purpose of causing it, by the additional weight, to spring into its place. Whether it will have the desired effect or not, remains to be seen; many persons considering it will not be safe, or to be relied on, till the whole bridge is pulled down and rebuilt.—— On Thursday week, a locomotive Post Office, with human and other machinery complete, was dispatched from Bristol, with the mails to Exeter.—— On Thursday week, one of the arches of the viaduct now in course of construction at Dewsbury, on the Leeds and Dewsbury line, gave way and fell in, "owing," says the *Halifax Guardian*, "to some workmen, who were working in the night, having inadvertently put too great a weight of stone on one side of the arch, before the other side had got sufficiently backed up, which caused the centres to give way, and the whole mass of masonry to be precipitated to the ground." The contractors, Messrs. Crawshaw, however, are said to have "spared no expense in the erection of substantial scaffolding and other preparations necessary for securing the safety of so heavy a mass of masonry as this is."—— Messrs. Fell and Jopling, contractors for the portion of Furness railway between Dalton and Lindale, broke ground three weeks ago. In this contract there will be a tunnel 300 yards in length; fifty excavators are at work on it.——One of the main arches of the high level bridge at Newcastle, says the *Gateshead Observer*, is now complete, and has been exposed to a test of extravagant severity, doubly exceeding any trial to which it can by possibility be put by the ordinary traffic of the railway.——The fourteen hours time distance between London and Edinburgh, says the *Scottish Railway Gazette*, is now a great fact, as 'the thing has been done.'——

Another great fact is this, that the House of Commons has got an electric telegraph of its own for the more expeditious accomplishment of its often somewhat tardy procedure, so far at least as the transmission of communications between the committee rooms and the lobbies is concerned, by means of which, members attending committees are now enabled to learn instantaneously who is speaking in the house, and the time at which a division may be expected!——The Electric Telegraph Company's spacious design for central premises in Lothbury is now in progress of construction. Here, of course, it is intended that the wires from the various railway stations will concentrate, so as ultimately to identify, or represent, all the principal vital foci, or centres of life and action, within the circle of our island, if not also those adjoining, such as Ireland, Isle of Man, &c., and for international intelligence with the nearest continental points of approach in the channel. Mr. Bain's *punching* telegraph, already described in THE BUILDER, appears to be one chosen as best adapted to that diffusion of commercial and other intelligence, preparations for furnishing which, to the subscription-rooms of towns within the compass of the telegraphs either laid or laying down, have already been made, so that, according to the *Morning Herald*, the metropolis is to be at once put into communication with the following towns and cities, namely, Margate, Ramsgate, Deal, Dover, Folkestone, Canterbury, Maidstone, Tonbridge, Gosport, Southampton, Winchester, Dorchester, Bristol, Gloucester, Cheltenham, Peterborough, Yarmouth, Huntingdon, Hertford, Northampton, Coventry, Birmingham, Wolverhampton, Stafford, Chester, Liverpool, Manchester, Leicester, Derby, Nottingham, Lincoln, Chesterfield, Sheffield, Bradford, Wisbeach, Lowestoff, Cambridge, Chelmsford, Ipswich, Rotherham, Barnsby, Wakefield, Leeds, Halifax, Rochdale, Hull, York, Darlington, Newcastle, Berwick, Edinburgh, Glasgow, Scarborough, Bridlington, Stamford, Norwich, St. Ives, Ware, Colchester.

THE WELLINGTON STATUE.

AN AD INTERIM PROCEEDING.

SIR,—Since we have got the Duke himself at length upon the arch,—"dead man" to any thing like an *approval* of the conjunction itself though he had already declared himself to be,—a *lapsus vitæ*, by the way, which now very plainly *proves* that he positively *disapproved* of that conjunction, else why "*dead*" to all *approval*, and yet now *alive* to the mere *indignity of a removal*?—little more need be said on that *mauvais sujet*, the statue upon the arch; especially since you have yourself already stripped off the bedaubing of figurative gloss, or bronze, or whatever you may call it, under which not only the bare nakedness of every thing like right reason, but the positive deformity of every thing like right moral lay lurking till thus exposed.

With your permission, however, I would semi-seriously suggest, that since the committee who pledged themselves,—their honour, I suppose, which is therefore still in pawn,—that they would "take down the statue from the arch,"—*id est*, as now *translated* by the committee themselves—that *they* would "overthrow the monument in the Duke of Wellington's very sight," and,—still "out of their own mouths" speaking, if not "condemning,"—thus commit, as a committee, this "most offensive and wanton affront:"—Yes, pledged *themselves to do all this*,—remorselessly, to drop the good old duke down from his high estate,—"from the height of his glory" (*sic scribitur*), and replace him on the ground;—since that most honourable and Duke-devoted committee, who pledged themselves to do all this dirty and yet dreadful work in the mere event of the public at large, or of competent judges, not approving of its present position, have been prevented by the still more Duke-devoted Government from committing this deliberate, designed, and deadly dishonour and affront to the "dead" alive, I would indeed suggest, with all the seriousness which so grave a subject merits, that the pedestal designed for the brazen duke, and intended by the Woods and Forests to be erected in the park adjoining, just about the spot so significantly pointed at, from the beginning even until now, by the beau-ideal duke himself—as by far the most suitable site for his own 'mould of form',—be erected there as a pedestal still, as at first designed, notwithstanding the present unavailing but obvious longing both of Copenhagen and his master to move in that precise direction, from the truly 'bad eminence' from which they thus themselves appear to be so anxious to 'be off.' And so soon as the 'pedestal' is thus erected, that those trophies which the Government proposed to adapt to the arch, in the place of Copenhagen and his centauric prolongation, be, though designed for the arch, *in the meantime* mounted on the pedestal, there to await that magical 'presto' or *empressement* of the *Vox populi*, by means of which, will-he nill-he, some fine morning, the mutual transposition so devoutly to be wished, will of a sudden be realized, to the equally sudden relaxation be it hoped of the grinning jaws of "surrounding nations."

One decided advantage in the adoption of such a proposal would be this, that the one grand absurdity would be kept in countenance by the fitting companionship of a counterpart absurdity; so that either neither could shed ridicule on either, or, more properly though still figuratively speaking, both could *make* merry, one with the other, like some bizarre but good-humoured couple who *pro tem.* have exchanged their respective toggery for mere pastime, or for the fun of the thing itself.

In the hope that my suggestion will not be lost sight of,—I am, Sir, respectfully yours,

J. E. D.

THE GARDENS IN THE GREEN PARK.

SIR,—In 1790 the crown was graciously pleased to appropriate under lease, with strong covenants, to all the houses in a line from Piccadilly to the palace, leading to the stable-yard, the entire ground on the left hand of the Queen's walk, for "an ornamental garden enclosed with iron rails," and said tenants "shall not suffer any alteration whatsoever in the height, pattern, construction, or colour of the iron rails, &c." "Shall not suffer to be erected or set up any wall, poles, or rails, or any other kind of fence."

Either from ignorance or wilfulness, these gardens have become a wilderness of unsightly forest trees, disfiguring the park, and obstructing from the inhabitants the charms which the view combines; encroachments were here and there attempted, and it is only lately that the Woods and Forests have removed the palings erected by the late Lord Durham and Sir F. Burdett. The covenants in the leases proceed thus,—"Nor sow, plant, or set, or cause to be planted on the premises, any tree, or plant, any shrub, bush, or other thing whatever that may in any way darken or prejudice the rights of, or obstruct the view or prospect from any house, or building adjoining, or near to the said premises, or use the same for any other use or purpose than that of an *ornamental garden*."

Why do not the Woods and Forests enforce the intention of the leases without obliging individuals to complain of their neighbours,—and not allow the park to be disfigured by scrubby trees, harbouring soot and cats, in lieu of flowers and flowering shrubs, and depriving the public of the "ornamental gardens."

I am, Sir, &c., P.

CAST-IRON IN ENGINEERING WORKS.

THE following minute of the Railway Commissioners in reference to the report of the engineers on the late accident, by the breaking of the iron girder bridge, at Chester, was transmitted, a few days since, to the Lords of the Treasury.

"The commissioners of railways, after considering this report, are of opinion that it is their duty to call the attention of her Majesty's Government to the uncertainty which at present exists respecting the conditions to be complied with in employing iron, but more particularly cast-iron, in engineering works. Although the facts which have been collected and the principles which are acknowledged may have proved sufficient for the guidance of engineers in the application of iron to works which are not exposed to an action differing materially from a steady load, yet there appears to be great doubt whether the experimental data, and the theoretical principles at present known, are adequate to guide them in designing iron bridges when these are to be traversed by loads of extraordinary weight with great velocities. When exposed to the rapid motion of railway trains the structure should be capable of sustaining, without permanent injury to any part, the concussions which any irregularity may occasion, and the vibratory action which a rapidly alternating change of condition must produce. The commissioners have reason to believe that much difference of opinion exists among the most eminent engineers of the present day as to the proper form and dimensions to be given to railway girders of iron, to resist the combined action of the several forces to which they are subject during the transit of trains; and until the subject has been further investigated, they cannot be considered as having sufficient data for their secure guidance.

The inquiries which are necessary on this subject demand the combined attention of scientific men and practical engineers; and the commissioners believe that this object may be most effectually obtained by means of a commission appointed by the Government.

To the commissioners appointed every facility for experiments on an extensive scale should be afforded, and they should be requested to endeavour to arrive at such principles, and to form such rules, as may enable the engineer and the mechanic, in their respective spheres, to apply the metal with confidence. Another subject that might advantageously engage the attention of the commission is the action which takes place under varying circumstances in bridges formed by adding tension bars to cast-iron beams, as in the bridge over the Dee, at Chester."

ST. STEPHEN'S CHURCH, ROCHESTER-ROW, WESTMINSTER.

OUR readers are already aware of Miss Burdett Coutts's intention to build and endow a church and schools in Rochester-row, Westminster, in honour of her father's memory, at a cost in the whole, of little less than 30,000*l.** Mr. Ferrey was appointed to carry out the noble intention, and on Tuesday last, the 20th, the esteemed founder, assisted by his lordship the Bishop of London, and a large number of distinguished persons, laid the first stone of the intended edifice.

In a cavity beneath the stone was placed a bottle, hermetically sealed, containing coins and the following inscription:—

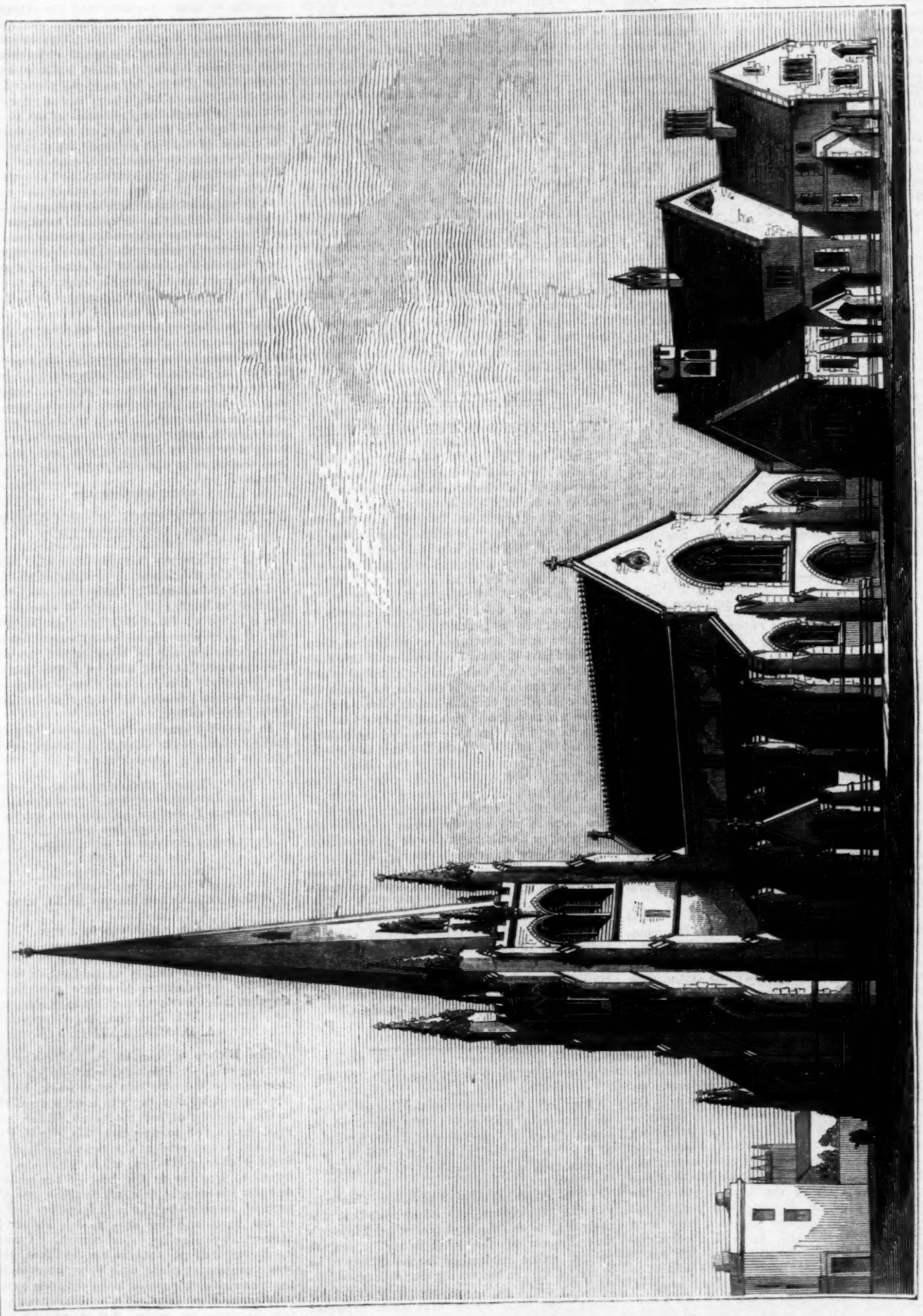
"Hujusce Ædis sacrosanctæ,
Deo, Creatori Sospittaori Sanctificatori,
in honorem B. Stephani protomartyri, dicatæ,
lapidem auspicalem posuit
Angela Georgina Burdett Coutts,
filia natu minima
Francesci Burdett, Baronetti,
hujus civitatis Westmonasteriensis
Suffragiis olim in Senatum per XXXI. annos
cooptati,
eadem illa, pietatis ergo in patrem,
et gratæ in Deum observantiæ,
quam nunc inchoavit ædem,
proprio sumptu exstructura,
ornatura, dotatura,
singulare in hoc seculo tantæ munificentiæ exemplar.
XIII Prid. Kal. Aug
A. D. MDCCCXLVII."

The Bishop of London in addressing the meeting said,—"The lady, to whose christian munificence we owe this good work, having been moved by filial piety to erect a memorial to the memory of her respected father, who represented for many years this city in Parliament, recollected at the same time that she had a Father in Heaven, whose glory she was bound to promote to the best of her means; and she has sought to combine these two objects of perpetuating the memory of her father in the flesh, and her duty to her Father in Heaven, by erecting this church. I need hardly remind you, that in the old times, this was a customary mode both to commemorate the memory of the dead, and to express gratitude to the Most High. I need hardly tell you this, for many an ancient parish church and noble cathedral has been endowed by the pious liberality of individuals; nor need I tell you

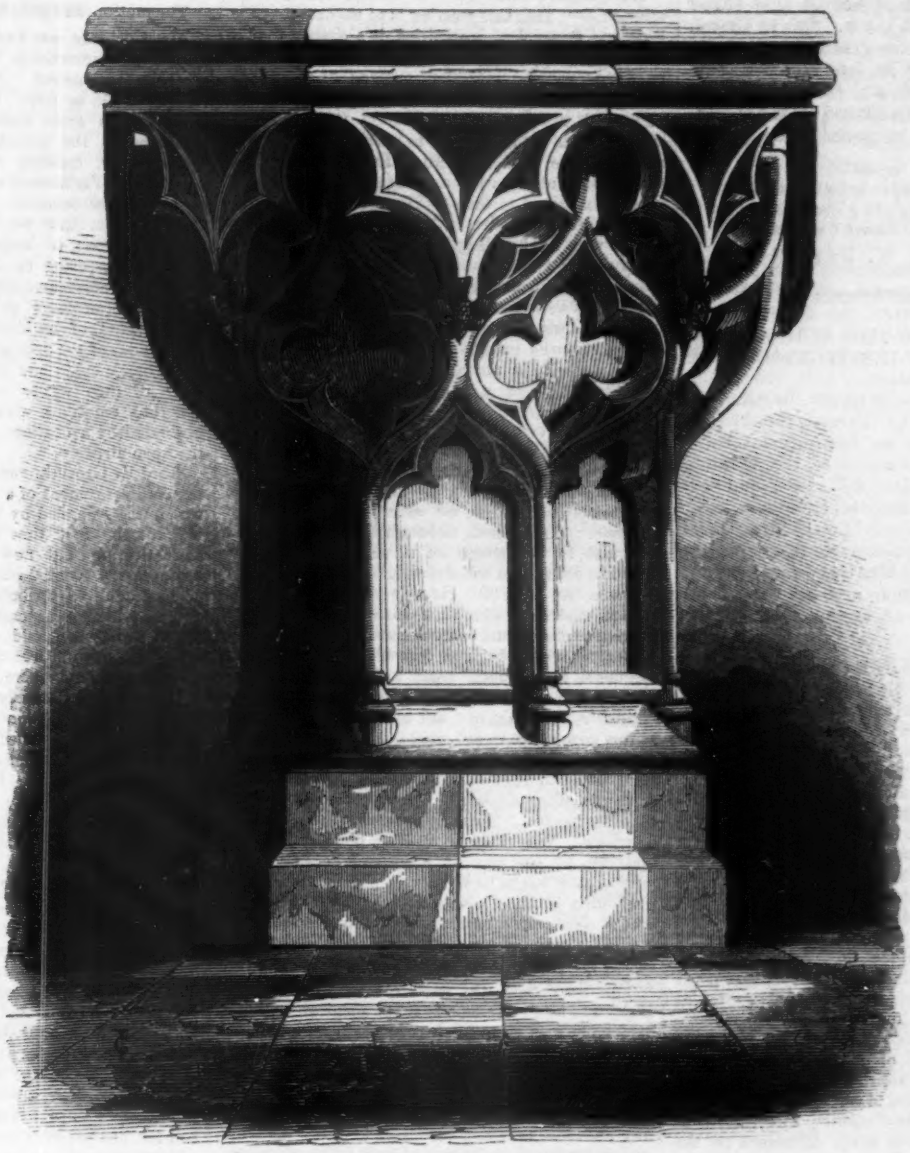
* See Vol. IV., p. 483.

ST. STEPHEN'S CHURCH, AND SCHOOLS, WESTMINSTER.

Mr. B. FERREY, Architect.



FONT IN THE CHURCH OF ST. JOHN, LUXEMBURG.



that, for many and many years past, examples of individual munificence have been exhibited so manifold that I dare hardly fix upon any one to compare with those of old times. The doors of this church will, without distinction, be thrown open to all who live in the district, who may thus come and drink of the water of life freely. All may enter who are inclined to do so, as far as the capacity of the building will admit, and the result will be that others, instigated by this liberality, will come forward and set another such example for the benefit of those who cannot find room within its walls. And here I cannot help speaking of a venerable body—the dean and chapter of Westminster—who have given the site for this church and these schools, and who have the warmest desire to further the great object of instruction to all within their reach."

The following inscription was engraved on the trowel:—

"To
MISS ANGELA GEORGINA BURDETT COUTTS,
The Founder
of the church of St. Stephen, Westminster,
THIS TROWEL
is presented, as a token of respect and gratitude, by
The Inhabitants of the District,
July 20, 1847.

'Mercy and Truth to them that devise good.'—*Prov.* xiv. 22.

LAUS DEO."

The accompanying engraving gives a representation of the church as it will appear when seen from the north-west. It is designed in the style of architecture prevalent in the fourteenth century, called "Decorated," and is to accommodate 1000 persons It will consist of a nave, 82 feet long by 21 feet wide; aisles, 82 feet by 13 feet; chancel, 47 feet by 21 feet; and a massive tower and spire at the east end of the north aisle. The base of the tower is 23 feet square, and the entire height 200 feet.

The materials to be used will be Sneaton ragstone for the walls, and Anstone stone for the various dressings. The roofs will be constructed of British oak, and covered with lead; and the open seating throughout, together with the chancel stalls and screens, will be formed of wainscot. The tower is to contain a peal of bells.

The schools now erecting, as seen in the engraving, are constructed with the same materials as above described, and are capable of holding 230 boys and 170 girls. The master and mistress's house are close adjoining these buildings. They are designed in a suitable style to the church, and are being erected, at the cost of 3,400*l.*, by Messrs. Rigby, of Westminster, by whom the church also is to be built.

THE NELSON COLUMN.—Animation appears to be returning here, and some people are bold enough to say now, that this monument (of many things), is positively to be completed without further delay.

INTERESTING FONT IN ST. JOHN'S CHURCH, LUXEMBURG.

THE Font here represented, and which seems to be of the fourteenth century, is in St. John's Church at Luxemburg, but it originally was made for the now desecrated church of St. Ulric there. It is of one sole piece of stone, including the base, pedestal, and bowl. The base, pedestal, and rim of the bowl are octagonal; but the pedestal is of tapering form, and from this circumstance, and the beautiful arrangement of its Gothic tracery,—the upper portion of which is in very bold relief and certain parts of it completely pierced,—and from the conformability also of the tracery which envelops the bowl itself, a whole is produced with so unusually graceful a flow of lines, that I do not recollect ever to have seen its like. As to its precise dimensions, however, my notes only state that its present height above the pavement is 105 *centimetres*,—its extreme width at top being 85, each face of its base, 30, and each face of its rim, 35.

Other rare works of art in St. John's Church are a gilt-silver monstrance, or *ostensoir*, in form of a tower and spire of the fourteenth century, and an image of the Virgin Mary, painted of a brown colour, with reference, I presume, to the passage in the Song of Solomon, "I am black but comely," and which image is probably a copy of the celebrated statue of "Our Lady" at Loretto, that was taken away by the French in 1797.

The church of St. John was founded A.D. 1309, by the Emperor Henry VII., father of John, the blind king of Bohemia, and Duke of Luxemburg, killed at the battle of Crecy; and whose remains were deposited in their twelfth sepulchre by the pious care of the present King of Prussia on the 26th of August (the 492nd anniversary of his death), A.D. 1838, at Castel, near Saarburg. But the greater parts of the present church, and of its late accompanying monastery, were rebuilt A.D. 1624, by Charles II., King of Spain, as indicated by the following chronogram above its portal:

CaroLo regnante,
Montereo VICes reglas beLgIo gerente,
phILIppo arembergIo gVbernante,
hospItaLe sanCto IohannI saCratVr.
W. BROMET, M.D.

FOUNDATION OF THE BUILDERS' BENEVOLENT INSTITUTION.

On the 19th inst. a numerous meeting was held at the Freemasons' Tavern, for the purpose of establishing an Institution for the benefit of decayed members of the building trades. Mr. Biers took the chair, and was supported by Lord Robert Grosvenor, Sir Benjamin Hall, Colonel Wood, Mr. David Salomons, Mr. C. Cochrane, Mr. Stephen Bird, Mr. Geo. Bird, Mr. G. Spencer Smith, Mr. McGill, Mr. Higgs, and others. Lord Dudley Stuart appeared at the close of the meeting.

The chairman, in opening the meeting, and expressing the pleasure he felt in appearing in so good a cause, in which he was sure that none could be more zealous, although he regretted that no abler advocate was in his place, proceeded to observe that although almost every business-class in the metropolis had an institution on whose benevolent aid decayed but respectable members had it in their power to fall back, yet builders as a class were still without any thing of the kind;—the only exceptions being merely local, such as the City associations, on which the metropolitan building trades in general had no claim whatever. The Benevolent Institution whose foundation-stone it was now full time, therefore, to lay, was designed on a more extensive scale of operation; its object, indeed, being not merely confined to the relief of subscribers, not merely limited even to the masters employed in the metropolitan building trades in general, but for behoof of every one of their class in the empire able to establish a reputable character, whether he had ever been, in his better days, a subscriber, or not, to the institution. The number of persons in the metropolis alone, dependent on the building business for their support was immense. The number of families dependent on the funds expended in metropolitan building, or on the earnings drawn therefrom, might be stated at nearly 30,000. The builder's life might be likened to that of a sailor, who begins with a fair wind, and has all plain sailing till the storms of adversity come on, over which he has no control. Although designed in the first place for decayed masters in the building business, the masters, in their endeavours to establish this useful institution, had not been thinking of themselves alone; they had not been forgetful of their workmen; for by one of the rules and regulations, any workman in the employment of a subscriber, meeting with an accident, might have relief from the fund, so that although he went to the hospital, while there, his wife and children, deprived of his earnings, would not be compelled, as hitherto, to part with not only their clothing furniture and utensils, but even the very tools with which alone their bread-winner could provide them all with food. A weekly contribution of 4s. to 5s., would prevent this cruel alternative, which, as most of those present well knew, necessity had compelled thousands on thousands to adopt. He felt and pleaded more for such as these than even for unfortunate masters. Hitherto he had been speaking of a relief fund; but the rules of the institution also provided for the establishment of almshouses. These, however, would form a subject for the future consideration of the subscribers, to whose views and decision it would be submitted when an adequate fund had been collected. It was proposed that 4,000*l.* or 5,000*l.* should be raised before any relief was granted. He could not help remarking, however, that even already deserving objects, unaware of the time requisite for setting such an institution as this afloat, were eagerly praying for aid. He had great pleasure in stating, that there were already nearly 200 subscribers, and on behalf of an institution placed on so extended a basis of general good to masters and workmen connected with the building trades at large, he felt assured that the public no less than the trades themselves would not be appealed to in vain.

An appeal on behalf of the institution was then read by the secretary, together with the rules and regulations; after which

Lord Robert Grosvenor, in moving the first resolution,—"That this meeting is of opinion that the Builders' Benevolent Institution is a charity that is both expedient and necessary, and merits the support of all classes, more especially those connected with the building trades,"—said, that though unwell he had felt too deep an interest in the establishment of such an institution to excuse himself from attendence on that account. He approved of the principles and the rules and regulations already so clearly explained to them. He had no conception that so many families and individuals were connected with the building interests of the metropolis. He was well aware that the class of workmen did as much as they in general could in earning a sustenance for themselves and families from day to day; and that therefore in unforeseen misfortune they were necessarily thrown on public resources. The class immediately above these too, though better able to fight their way in an emergency, had still as a class, much hardship and difficulty to cope with, and it certainly was the duty of their more fortunate fellow members and indeed of the higher classes in general, to assist the lower in misfortune. Of self-dependence, such as this institution more particularly inculcated, we were certainly bound to approve. He trusted, although the masters would look also to the benefit of those under them who were less able to be self-dependent, that this would never be lost sight of. He felt personally grateful to their chairman, who took so leading an interest in these matters; and congratulated him on the feeling way in which he had treated his subject. It was usual to hit upon some more or less delicate compliment towards the promoters of any commendable undertaking; but he feared the question he was now about to ask would scarcely come under the class of compliments. What had they been doing down to 1847? This young one was as yet in its swaddling clothes! Look at the almshouses of other trades. These almshouses must have had a builder. Who was he that he did not teach his brethren to go and do likewise? Now, at all events, they ought to be zealous and diligent in the promotion of their worthy object; and he trusted that at next year's general meeting they would have a good report of progress. He regarded this as laying the first stone of a noble building.

The resolution was seconded by Sir Benjamin Hall, who said: He had as great pleasure in being associated with them in so good a cause, as he had often had in acting with his noble friend, the mover, in reference to bills brought into the Commons, where they sat together. One great advantage in a metropolitan community consisted in the opportunity afforded to many who desired it, to meet together for the amelioriation of their fellow creatures. The great beauty of that community was its local self-governing and self-supporting system. When any class of the public came forward with that view they ought to be upheld. He should have much gratification in being a subscriber.

The resolution being then put to the vote, was carried unanimously.

Colonel Wood then moved the second resolution, approving of the laws; and said:—It might be presumptuous in him to propose such rules and regulations; but he could at least see that they were clear, comprehensive, and liberal. The 7th provided for the complete publication of accounts. The 19th constituted a managing committee of thirty, in which, with the change of one-third every year, assurance was given of the superintendence of a body of men fully and properly representing the trade; and though not too numerous, such a committee certainly constituted a liberal representation of the whole body, whose habits of business and occupation must render them peculiarly conversant with such duties; so that, if these rules were not perfect, they might, by the benefit of such experience, be brought to that perfection which the admirable objects in view demanded at their hands.

The resolution was seconded by Mr. Spencer Smith, and carried unanimously.

Mr. David Salomons, in moving the third resolution, which pledged the meeting to co-operation, said that he had great pleasure in taking a part in the establishment of a Builders' Benevolent Institution, the more especially as he had a *penchant* for building himself, although in his dabblings amongst bricks and mortar he had certainly derived more amusement than profit. He, too, confessed he was astonished that so enlightened a body as the building trades of the metropolis had only now taken the initiative in the establishment of such an institution for behoof of those whose interprize did not always prevent the experience of a hard fate. To aid in warding off such a fate deserved their most earnest exertions.

The motion was seconded by Mr. Stephen Bird, who expressed his regret that they had not begun sooner, since the object appeared to be so well supported, not only by the building trades in general, but by those noblemen and gentlemen who had favoured them with their presence and their good will and assistance.

The motion was put, and carried unanimously.

Mr. Cochrane was happy to perform his humble part in the proceedings by moving that a subscription list be opened. Without the sinews of war nothing could be done. Unless supported by liberal subscriptions great disappointment would be experienced in the present object. He had to congratulate the meeting on the advent of so many members of Parliament as had assembled with them on the present occasion. It was exceedingly fortunate for them that we were now on the eve of a general election, as both members of Parliament and those aspiring to be members of Parliament were in a most amiable mood, and influenced by most liberal feelings on such an occasion! The engagements of builders exposed them to all the vicissitudes of the open air, to the summer's heat and the winter's cold; and he had always found them a body of men whose hearts were open to those generous emotions which somehow always were generated by avocations conducted more or less in the open air.

Lord R. Grosvenor moved the fifth resolution for the commencement of a fund to provide an asylum, which was seconded by Mr. Higgs, who said that it was not the first time that he had advocated such an institution, but now he had every confidence in its success. Annual subscribers were the most important of all subscribers, as on them the main stay of steady income depended. He trusted therefore, that gentlemen would either now or very shortly come forward and free the institution at once from all anxiety on this score. The motion was put and also carried unanimously.

The chairman, in moving thanks to those gentlemen who had attended, observed, that his noble friend, Lord Grosvenor, had hinted that their infant was now born. He was sure that its parents had had some trouble with it. But now, in the presence of its godfathers and sponsors, he trusted it would prosper and do credit to them all, and more especially that in its advanced maturity it would be of great advantage to its *poor relations*.

The chairman then moved that the thanks of this meeting be given to the noblemen and gentlemen who have this day honoured the meeting with their presence and assistance; and further,

"That a vote of thanks is due and is hereby given to the public press, and particularly to the editor of THE BUILDER, for bringing this institution before the notice of the public."

A member of the meeting begged to ask the chairman whether it was intended that subscribers should have no preference over non-subscribers, or to what comparative extent relief would be given to non-subscribers; as he was afraid that unless some strict limit were fixed, the amount of subscriptions might be considerably curtailed.

The chairman in reply said, that the institution was designed to be established upon a broad and enlightened principle of general benevolence, which he felt certain would meet with as general a support. Of course, it was left to the discretion of the committee of subscribers what relief should be given and to whom; but it might so happen that a non-subscriber had stronger claims on their immediate attention than even a subscriber.

A non-professional subscriber further remarked, that although he was a subscriber, he would derive no benefit from the institution, but the very liberality of its basis might induce others as well as himself to subscribe. Lord Grosvenor remarked that he could appreciate the feeling which suggested the question, but of course the committee would have the power to postpone the administration of relief to non-subscribers, so long as applications from subscribers were before them. The chairman added, that the founders of the institution did not wish it to be said that they had merely selfish motives in subscribing, and that the power of granting relief should be left open to the merits of each case as far as possible. He should be exceedingly sorry if the benevolent design of such an institution were narrowed by any such limitation as that hinted at. It was proposed, however, that the gentleman who started the question, should allow himself to be put on the committee for the purpose of doing all justice to his suggestion. Mr. Ellis said that he only wished to draw attention for an instant, in conclusion, to the fact that the institution was founded on its broad principle of benevolence, in order that the public in general might be induced to take the greater interest in its success, and certainly if the extension of a helping hand to their fellow tradesmen in the provinces, or to non-subscribing members of their class, should check the flow of subscriptions from the building trades, the selfish limitation of its benefits to themselves would

as effectually check the more general flow of subscriptions from the public at large.

A vote of thanks to the chairman was then carried by acclamation, and the meeting separated after many of them had subscribed their names to the list, which had been previously read.

PROTECTION OF STONE-WORK.

Sir,—With respect to the preservation of marble and other calcareous stone from Atmospheric Influence, I cannot but think that the process invented for that purpose by M. Kuhlmann, of Lille, as stated in your account of a recent meeting of the Royal Institute of Architects (and to whose museum I have presented specimens of its good effect), would be at once more serviceable, more easily employed, and of infinitely less cost, than the application of wax, as recommended at page 313 of your No. of the 3rd inst.

M. Kuhlmann's process is, simply to mix in an iron vessel, with a solution in ten gallons of water of half a hundred weight of the impure carbonate of soda, called barilla—a quarter of a hundred weight (and gradually more, if necessary), of any clean siliceous grit-sand (or scrapings of flint-made roads, well washed from extraneous matter), until this sand shall cease to be dissolved even by a strong heat applied for some few hours to the vessel.

The *rationale* of the process is this:—Calcareous stones, and many stones called siliceous stones, consist chiefly of lime combined with carbonic acid, *i. e.* carbonate of lime. In the employment of the above-described protective solution (which is a silicate of soda), a truly chemical double-elective attraction takes place—the soda going to the carbonic acid of the stone, while the silica going to the lime penetrates the stone to a depth (but without altering the *form* of its surface) proportionate to the siliceous strength of the solution and the length of time given to its application.

This application may be effected either by immersing dressed or sculptured blocks in the clear and hot siliceous solution, or by brushing them over with it cold, before, or subsequently to, their being set up.

M. Kuhlman's process also improves the colour of the stone, and produces a hardness which, after a few days exposure to the air, becomes so great as to resist any scratching, except that of a sharp instrument; and it is, therefore, peculiarly adapted for case-hardening all new delicately sculptured work in soft stone, if not also for preventing the farther decay of many of our now mouldering monuments.

W. Bromet.

THE ELECTRIC FIRE AND THIEVES' ALARUM.

Mr. G. Petrie, the telegraphist at London and Blackwall Railway, proposes to us to facilitate the saving of buildings and property from destruction by fire, also to save *with certainty*, the lives of the inmates of dwelling-houses which may happen to take fire, and to prevent depredations by thieves, by means of electricity; causing the fire itself or the thieves themselves to *act necessarily* upon apparatus which shall convey *audible*, *visible*, and *sensible* alarm signals to the inmates or to watchmen. This scheme has not been put in practice although he has had it long in contemplation: we will let him state it in his own words:—

The audible signals may consist of bells, whistles, explosions, or any other signals which address themselves to the sense of hearing, and may be made to act with more and more vigour as the danger increases. The visible signals may be coloured glass, and lights in motion or at rest, red or yellow glass to signify fire, and blue or green glass to signify thieves. The sensible signals may consist of jets of cold water, so arranged as to commence pouring down on the pillows of all the beds, *a few seconds after* the *audible* fire signals have begun to sound, or they may consist of any other signals which will rouse the inmates of the house. In dangerous localities, an apparatus may be added whereby if thieves should succeed in effecting an entrance, the first step which they take on the threshold will discharge at them a charge of gunpowder, and if this warning should not be heeded by the thieves, a second step in advance will wound them in the legs with small shot, and a third step shoot them dead. A set of buildings may have one apparatus to serve the whole set, and the visible signals may be so arranged as to point out the particular house wherein the fire is just beginning to break out, or the house wherein the thieves have just entered, and in orchards, &c., the visible signals may be so arranged as to form a guide to the place where the signal originated, so that in all these cases no time need be lost in finding out the exact place where assistance is required. The alarums may operate not only in and about the house or set of houses where the danger exists, but also at any distant place wherever it may be desirable that some or all of these alarm signals should be perceived.

As to the mode:—The alarm signals may be made to operate either by the *breaking* or by the *completing* of the electric circuits, according to whichever plan may be most convenient for the particular apparatus employed, and in all cases the electric circuits may be *broken* or *completed* either by *springs*, or *by wires and vessels of mercury*. The electric circuits are broken or completed by fire in the following manner: either by means of the flame which runs up the walls, or else by means of the heated air which rises to the ceiling. The flame running up the wall, comes in contact with an inflammable cord, which runs horizontally along the wall, and the burning of this cord in any part, lets fall a weight which allows a spring to fly back and break or complete the electric circuit. The hot air which rises to the ceiling operates by causing the expansion of mercury or air or any other elastic or non-elastic fluid which is contained in tubes and other vessels—or by causing the expansion of metallic rods or sheets, or any other suitable solid substances—or by the depression of mercury by the expansion of enclosed air.

For the thieves' alarum, the electric circuits are broken or completed by the opening of doors, windows, shutters, boxes, drawers, cupboards, closets, &c., and also by the withdrawal of fastenings, and also by footsteps on staircases or on the thresholds of doors, windows, and other inlets, and also by any person getting over the boundary wall of an orchard or any other place.

The insulated electric circuits are arranged so that any one or more of the doors, windows, boxes, drawers, closets, &c., in a house can be instantly placed under the safeguard of the alarum, without the others being so placed, or by the turning of one handle, situate in the bedroom of the master of the house, the whole house and every thing in it may be instantly placed under the safeguard of the alarum.

Many modifications of the apparatus are described, but enough has been said to shew the nature of the proposal.*

Old Paintings in Eton College Chapel.—It was mentioned in The Builder the week before last, that on the removal of the wainscotting from the walls of Eton College Chapel, in consequence of the repairs now going on there, some ancient paintings had been brought to light. According to the *Daily News*, "these paintings, which appear to have been executed by Florentine artists between 1440 and 1480, and which are in a very fair state of preservation, represent a variety of miracles, alleged, by the Romish church, to have been performed by the Virgin Mary. It appears that when the choir was enlarged, under the superintendence of Sir Christopher Wren, these frescoes (?), some of which were not considered very appropriate ornaments at that time for a place of worship, were hidden from view behind the oaken panelling. Hence their preservation up to this period. It is the intention of the provost and fellows of Eton to cause as many of these works of art to be preserved as will not interfere with the alterations and embellishments now in progress. It has been suggested that the old oak panelling should be replaced, and that doors should be made to open in front of the paintings, so that they might at any time be inspected."

* "At the pleasure of the inmates of the house the apparatus may be made to ventilate the rooms at any particular temperature, and if the electric fire-circuits are broken or completed by the expansion of metallic rods instead of by the expansion of fluids inclosed in vessels, then the apparatus may be so arranged as during a thunder-storm to protect the inmates of the house against the effects of lightning, by causing any lightning which may happen to come into any of the rooms to fly to the ceiling, and from thence to run quietly into the earth."

BRITISH ARCHÆOLOGICAL ASSOCIATION.

The British Archæological Association opened their congress at Warwick on Monday last, and have had a very agreeable and successful meeting. Much has been seen and much done, and we shall, next week, give a detailed notice of such of the proceedings as more particularly interest our readers. Lord Brooke presided at the opening meeting, and has been assisted by Sir Charles Douglas, M.P., Sir Samuel Meyrick, Sir Wm. Betham, Sir Henry Dillon, Mr. Pettigrew, Mr. Crofton Croker, and many others.

NOTES IN THE PROVINCES.

Is Earl Fitz-William aware, says the *Leicester Mercury*, commenting on his lordship's complaint of the twopenny exhibition of St. Paul's, that in his own city of Peterborough, 6d. is demanded as a fee from every person on going into the minster except during divine service? St. Paul's is certainly a 'dirt cheap' exhibition when compared with that.——In Lincoln cathedral, a nave window designed from one in Chartres cathedral, is now being put up by Sir Charles Anderson.——The new dispensary in course of erection at Reading was much damaged by lightning on Saturday last. The upper portion of the building, comprising 'the entire huge coping' was overthrown, and several of the front projecting parts also demolished. A contemporary says, that 'no lives were fortunately sacrificed beyond' the narrow escape of an old lady in bed, who remained obdurate with a heavy stone suspended, like the sword of Damocles, above her head.——The Rev. T. Twisden, rector of Charleton, has offered the sum of 500*l.* towards the rebuilding of his church in a more convenient and central site.——The contracts for laying down the Newport Water-pipes from Carisbrooke, erecting a reservoir, tank, &c., being sent in on Wednesday and the successful contractor then ascertained, it is expected that the works will be forthwith proceeded with.——The projected improvements in the parish church of Chippenham were commenced on Monday week.——On Tuesday week before last the new church of Trevethin, near Pontypool, erected at a cost of 2,600*l.*, collected in voluntary contributions, was consecrated. It is in the perpendicular style, with five stained-glass windows, one of them the gift of the architect, Mr. Wyatt, and the others that of Mr. J. Harley, of Wainwern.——The Liverpool Guardian Gas Company have complained to the council of "the acts committed on behalf of the corporation in the present session of Parliament." They attribute the defeat of their bill to the conduct of the counsel who acted in London for the corporation, and protested against the want of good faith to the inhabitants displayed in such acts. It is said that the Dale-street Company have recently put themselves in communication with Mr. Cox, the engineer of the Guardian Company, and given him the opportunity of trying experiments here, at their expense, in the production of gas at the cheap price he has declared it to be in his power to produce it at.——The *Albion* states that in no less than eighty cases brought before a stipendary magistrate of Liverpool on Friday and Saturday week, for letting cellars to Irish immigrants, the said cellars being only about 6 feet in height from floor to ceiling, and the ceilings being about a foot or a foot and a half above the level of the street, a fine of 1*l.* 4s. 6d. was inflicted in every case, and a determination made to levy a similar fine for every day the cellars should continue to be occupied after that first conviction.——The mayor of Wigan has issued a proclamation, announcing that parties who neglect to keep their houses in a cleanly condition, will be brought up and fined under the bye-laws.——An association, says the *Albion*, something between a tontine and a joint-stock building association, has been formed by influential persons at Birkenhead, for the purchase of all the unsold land in the park there, and the erection thereon of thirty to fifty villas and terrace-houses.——Heather Church, says the *Leicester Journal*, is to be re-opened on 27th instant, after being renovated and enlarged under the direction of Mr. H. J. Stevens, of Derby. The whole nave has been allotted to free-sittings.

New Books.

The Learned Societies and Printing Clubs of the United Kingdom. By the Rev. A. Hume, LL.D. Longman & Co. 1847.

The purpose of this work is to give an account of the origin, history, objects and constitution of the various "learned societies," as they are politely termed, of England, Scotland, and Ireland, together with an account of the existing printing clubs. It is for the most part very correctly done, and will be found very useful for reference, especially by dwellers in the provinces.

In the introduction, the author makes a suggestion which deserves consideration, namely, the establishment of a central institution for the learned societies. "Did we possess a union, were it only of presidents and secretaries, for common objects, it could communicate, in forty-eight hours, with fifteen or sixteen thousand men, whose opinion would be entitled to a degree of substantial respect that it has never yet enjoyed."

Correspondence.

ARRANGEMENT OF RAILWAYS.

Sir,—As I perceive that you are fully alive to the necessity of *improvement* in the construction and management of our railways, allow me to say, one point which I think is very much neglected and which is the fruitful source of accidents, is the want of communications at the stations from the platforms on each side of the line, either by *bridges over* or by *tunnels under* it. The comparatively small expense at which this precaution could in most cases be carried out, renders it the more surprising that such a want should continue to exist.

A simple wooden bridge, with a flight of steps on both sides, would be all that is required for the purpose at most small country stations; of course in large towns a more substantial erection would be needed.

Another point in which I think railway companies have erred in the construction of *trunk lines*, where the traffic is likely to increase considerably, is their not having formed them of sufficient width to admit of a *third* line of rails being laid down. As a case in point, observe the railways which come to London bridge. They have been *widened twice*, and will, in all probability, be widened a third time. It is the natural consequence, which railway directors would readily see, if they would but look an inch before their noses, that as railways are continually being *extended by branches*, the traffic on the trunk line must necessarily increase, and it behoves them to make provision for it.

A third line also gives a great advantage in this way, that should one line require repairing, there would always be two in working order.

If thought well, one line might be set apart for luggage trains, and the other two for passenger trains; or, one line for express trains, and the other two for ordinary trains. The same short-sightedness is evident, also, with respect to railway terminuses and stations, which are *always* being altered and enlarged, and are in consequence always untidy and unfinished.

I would particularly urge upon the London and York Railway, now in course of formation, to take counsel by experience, and to form their road of a sufficient width for a third line of rails.—Yours, &c.

A Railway Traveller.

STONE LIFTERS.

Sir,—The lewis, sketched in your last number, is not a new form for the purpose. One on much the same principle was used, among other places, at the buildings of Orlingbury Church, Northants, in 1841. Mr. John Johnstone, the clerk of the works at that place, was the adapter. The one given by you has the disadvantage of the long bar bending inwards, through constant use; but the one which he used had not that objection. It had two long bars, one over another (passing through mortices in the cross pieces, having pin-holes at different distances to adjust to any thickness of stone), whereby, when at work, the lower one was subject to tension, and the upper one to pressure, doing away with the tendency in the bars to camber. It was used chiefly for raising ashlar. I merely write this for the benefit of your readers, and not to deprive Mr. Oliver of any credit which may attach to him for his application.

I am, Sir, &c., R.

Anne-street, Birmingham, July 19, 1847.

SHORT TIME ON SATURDAYS.

Sir,—Through the medium of your useful and widely-circulated paper, may I call the attention of the building trade to the peaceful movement now in progress amongst the carpenters and joiners of London, which is to obtain the privilege of leaving their work at four o'clock on Saturdays. I am encouraged to do this from the favourable notice you have taken of it in a former number of your Builder.

For some time past, an opinion has been gradually gaining ground, that many of the conflicting claims which arise between employers and their workmen might be satisfactorily arranged, if a good understanding existed between them: by this means the great inconvenience and loss sustained by the former, and the large amount of suffering endured by the latter, which are the inevitable results of strikes, would be avoided, and the position of both parties be materially improved.

With these views firmly impressed on the minds of the carpenters and joiners of the metropolis, they memorialized their employers; the most influential of whom, I am happy to say, have met their wishes in a corresponding good spirit. Mr. Thos. Cubitt, Mr. Wm. Cubitt, Mr. Baker, Mr. Kelk, Mr. Jackson, Mr. Piper, Messrs. Armstrong and Smith, Mr. Freak, Mr. Myers, Mr. Fitz-Patrick, Mr. Lee, and Mr. Seth Smith have already given the privilege.

To these gentlemen the trade must feel themselves gratefully obliged. This noble display of good feeling and disinterestedness will be productive of increased satisfaction, comfort, and good-will, on the side of their workmen; and serve as laudable example, worthy of imitation by other employers.

There can be no doubt but that the privilege in question will become general before long: that it may be so is the wish of

A Carpenter.

THE GEOMETRICAL SYSTEM OF THE MEDIÆVAL ARCHITECTS.*

Sir,—Having had my attention directed to an article "On the Geometrical System, applied by the Mediæval Architects to the Proportions of their Ecclesiastical Structures," by my very zealous friend, R. D. Chandrell, architect, inserted in pages 300—302 of your valuable journal, The Builder, wherein I am introduced as having explained to him certain ideas that probably influenced the architects of the middle ages, and a diagram is given explanatory of those ideas, I consider it but just, not only to myself, but to the public, to take this early opportunity of stating, that I intend shortly respectfully to solicit your permission to shew, by means of your journal, that neither the ideas which I am stated to entertain, nor the diagram given by Mr. Chantrell, are what constitute my supposed working principles of ecclesiastical architecture; but only disjointed scraps patched together, to shew that my mode of proceeding "cannot therefore be considered an universal system."—I am, Sir, &c. John Browne.

21, Blake-street, York, July 19, 1847.

Vandalism at Baalbeck.—From a private letter just received from a traveller, we receive the unwelcome intelligence that the magnificent Temple of the Sun at Baalbeck has been destroyed by order of the viceroy, for the sake of its fine stones, which are to be employed in erecting barracks for the cavalry and a forage magazine. Solyman Pasha so far saved the splendid gateway, as to cause the stones to be replaced in their original form in the construction of the entrance to the barracks. We lament to record such vandalism in the nineteenth century and in the land of the Pharaohs.—*Literary Gazette.*

* Mr. W. P. Griffith's work on this subject, to which we referred a few weeks since, is now before us, entitled "Ancient Gothic Churches, their Proportions and Chromatics. Published by the author, 9, St. John's-square, 1847." We shall take an early opportunity to examine it.

Miscellanea.

Britton Testimonial Club Dinners.—One of the most noticeable of these dinners was given last week by Mr. Gould, F.S.A., the treasurer, whereat Lieutenant Waghorn made a remarkable speech in respect of communication with India; and undertook to say that within seven years, the time for the transmission of letters would be shortened to fifteen days. He described the steam-apparatus which is now punching a passage through the Alps. Mr. Pettigrew gave some interesting particulars concerning the "mummy wheat," now to be found all over England; and Mr. Britton himself made a capital speech on the state of antiquarian knowledge. Mr. Crofton Croker, Mr. Cubitt, Mr. Cunningham, Mr. Graham, Mr. Grissell, Mr. Gwilt, Dr. Roots, Mr. Wansey, Mr. Young, and others also spoke. At a following dinner, given by Mr. Gibbon, at Winchmore Hill, Captain Smyth, Director of the Society of Antiquaries, referred to his rescuing a sculptured marble from the hands of bricklayers at Alexandria, who were about to use it in forming a drain, and which has proved a curious link in tracing the history of Greek art. It is now at Stowe.

Ventilating Bricks.—Sir,—I would suggest that bricks may be made of the common size, but of somewhat better material, pierced through (their thickness) with holes one quarter of an inch *square*, and as much apart. It is not intended that the whole area of the brick should be pierced in the manner described, but only one half of it. By the ordinary mode of ventilating through openings in walls, there is nothing to prevent the cold air blowing directly into the room, but by these bricks it may be *driven downwards* before it can enter the inside of an apartment intended to be ventilated. The superior temperature of the air inside a room, will, in most cases, give it a sufficient ascending power to overcome the pressure of the colder air outside; and this effect will be increased in proportion to the length of the column of air passing through the *tube-like* perforations of the bricks, which may be placed one over the other, so as to produce a column of air of any height that may be found to give the best practical effect in producing thorough ventilation without a perceptible draught.—H. Liddell, Hull.

A Mammoth Monstrosity.—Conceive a huge structure, originally erected as a place of worship, converted into four strata of tenements, for the occupation of twenty families. Let there be no access to those tenements but by a covered passage-way, leading into a yard, or dry well, open to the sky, and overlooked by windows on every side. In this yard, so surrounded by tenements, and having no opening to the street but by the covered passage-way already mentioned, let all the privies of the twenty families be placed. Would not such a contrivance give birth to a monstrous nuisance? Inevitably it would. And yet, in this age of sanatory reform, a device of this kind has not only been contrived, but it is well-nigh executed, and may be seen within a stone's throw of a newspaper-office which shall be nameless.—*Gateshead Observer.*

Modern Vandalism.—The *Art-Union Journal* for July, gives a striking instance of the indifference of some moderns to that very art of wood-carving which in this country we are seeking to revive. The splendid altar-piece of St. Gudule's, at Brussels, designed by Rubens, has been sold to an Englishman to save the expense of regilding, and has passed through a London auctioneer's sale-room!

Dover Refuge Harbour.—We learn, from the *Canterbury Journal* that the Messrs Francis Freeman and Lee, of London, have taken the contract for carrying out the breakwater connected with this undertaking to the amount of 200,000*l.*, and that so soon as the necessary preliminaries—such as the signing of the contracts, &c.—are completed, this great national work will be immediately commenced.

The Decorative Art Society met at dinner on the evening of the 21st instant, as a mark of respect to Mr. Edward Cooper, one of their vice-presidents, who is about to leave England for some years. The chair was taken by Mr. L. Dennys, who addressed the company on the merits and prospects of the society, and other topics, with much taste and good feeling.

Projected Works.—Tenders have been called for by advertisement for the erection of a church at Highbury; a vicarage-house at Polluxhill; a school-room at Tipton; and one at Southwell; for rebuilding greater part of schoolmaster's house at Reston Coldingham; erecting and supplying materials for an engine-house, boiler-house, tower, and other works at the Milton next Gravesend Water-works; erecting a fever hospital at West Derby Union workhouse, Lancashire (extension of time); an hospital at Cheltenham; a fever-house at Melton Mowbray Union Workhouse; also for the enlargement of the Dublin Consumers Gas Works, comprising retort-house, and coal store additions, with wrought-iron roofs and cupola, large cast-iron tank with telescopic gas holders, columns, bridges, chains, weights, &c, all to be put up and completed at Dublin; for the execution of an outer harbour and entrance lock, and the enlargement of an inner basin for Forth and Clyde Canal Company; and for the erection of a new union workhouse for 200 paupers at Bridgnorth, including hospital and vagrant wards, with plans for the whole.

The Exhibition in Westminster Hall.—Government, it is said, has just concluded the purchase of Mr. Cross's fine picture of "Richard Cœur de Lion," for the sum of five hundred guineas, and Mr. Pickersgill's "Burial of Harold" for the like amount. Mr. Watts's "King Alfred Repelling the Danes" has been also purchased for 200*l.*, the artist not having asked more, in consideration of his having obtained a 500*l.* premium. The sea-fight, in which Nelson is seen boarding the San Josef, by Mr. Knell, has, we hear, been likewise purchased by Government. These are, of course, intended for the decoration of the new palace at Westminster. Mr. Armitage's "Battle of Meeanee" has, we learn, been purchased by the Queen for her own collection. A long list of subjects, which the commissioners intend to offer as matters of future competition for the decoration of particular rooms in the new houses, will shortly be announced.—*Athenæum*. The exhibition is now open to the public without charge on all days but Saturday.

Competition.—Premiums of twenty guineas and ten guineas are offered for two selected designs for elevations according to plans already provided, for a court-house and offices at the town-hall, Swansea.—Plans, with estimates, are also wanted for the Bridgnorth Union Workhouse, for 200 paupers and for detached hospital and vagrant wards.

TENDERS

For the erection of new buildings, Camberwell Workhouse. Mr. Plum, architect.

Mathews	£2,982
Howard	2,965
Willis	2,884
Cooper and Davies	2,860
Burtenshaw	2,825
Haynes and Co.	2,803
Harding	2,798
Cox	2,750
Patrick	2,688
Thompson	2,686

New buildings, Hackney Union.

Vote	£6,955
Patrick	6,340
Ashby	5,740
Hawke	5,550
Jay	5,355
Hilton	5,195
Bair	4,866
Crook	4,595
Norris	4,547

The quantities were furnished.

The above are the amounts, after allowing the value of the sound old materials in the present buildings, which are to be used in the new buildings; this, says a correspondent, may be cited as the principal reason for the great difference between the highest and lowest amounts: by no means, however, a sufficient one.

For two houses and workshop upon the estate of the Mercers' Company in Upper St. Martin's-lane. The quantities were furnished, and the tenders opened in the presence of the parties.

I'Anson	£2,986
Burstall	2,968
Winsland and Holland	2,896
Curtis	2,644
Cooper (accepted)	2,488

TO CORRESPONDENTS.

"*I. P.*" (Manchester).—We should suggest two or three advertisements.

"*J. J. S.*"—The letter has not reached us.

"*J. H. D.*," next week.

"*G. G.*" (Borough).—Thanks.

"*J. L.*"—An opinion without seeing the work would be useless. We fear the defect could not be remedied.

"*A. G. Green*"—next week.

Received.—"J. W.," "J. G. W.," "Messrs. R.," "C. G.," "E. R.," "W. R.," "C. H." (Islington), "T. I. M.," "Archi," "Competitor who *has* seen the site," "T. A. H.," "H. W."

"*Books, Prices, and Addresses.*"—We have not time to point out books or find addresses.

ADVERTISEMENTS.

MODEL PUBLIC BATHS, Goulston-Square, WHITECHAPEL. The Baths for Men and Boys will be open for use on and after the MONDAY, July 26, from 6 in the Morning till 10 at Night. Charges,—First Class (two towels), Cold Bath, 3d.; Warm Bath, 6d. Second Class (one towel), Cold Bath, 1d.; Warm Bath, 2d. Every Bath is in a private room.

The Committee earnestly solicit Donations, to enable them to complete the Baths and Wash-house. Donations received at the Baths, the Committee-room, and the Bank of England, and by most all the London Bankers.

Committee Room, 3, Crosby Square. By Order, JOHN SMITH, Clerk.

WANTED, to Purchase a Light Stone-truck, 4½ feet wheels; must be in good condition.—Address stating lowest price, to 27, Gloucester-street, Queen-square.

TO BLIND MANUFACTURERS, BUILDERS, AND OTHERS.

TO BE DISPOSED OF cheap, several Transparent Paintings by a first-rate artist, suitable for drawing-room, staircase, or other windows; several pannelled landscape paintings, suitable for decorating a concert, ball, assembly or other rooms; also a quantity of straining frames suitable for a blind manufacturer.—Apply to J. MILLS, 40, Great Russell-street, Bloomsbury.

PATENT BELLS.

C. & T. MEARS are now enabled to supply Bells made of the new alloy, called "Union Metal," in any quantity and variety. They particularly call the attention of the trade to the house and clock bells of this material, as being so superior in the quality of tone. The bells may be seen at the Foundry, or sample orders sent.—Bell Foundry, Whitechapel.

GREASE! GREASE! GREASE!—JAMES THOMAS FITT begs to inform Railway Contractors, that he is supplying Patent Grease at the following prices:—White Grease, 11s. per cwt.; Black Grease, 8s. 6d. per cwt. 2½ per cent. discount for cash.

Samples sent by addressing to J. T. FITT, Swan Mead, Bermondsey New-road, London.

ZINC WORK.

MESSRS. F. and J. HARLAND beg to call the attention of Builders and others, to the following list of prices, for cash:—

2-inch Pipe	per foot 4½d.	3½-inch Gutter	per foot 4½d.
2½ ditto	" 5d.	4-inch ditto	" 5d.

Including fixing.

Flats Covered and Cisterns Lined from 4½d. to 6d. per foot superficial; Cornice Gutters, 5d. to 7d.—No. 3, Cumberland-place, Newington, Surrey, opposite to the Fishmongers' Alms-houses.

N.B. Orders by Post punctually attended to.

LEAD WORKS, HAMMERSMITH.

F. CLARK and SON, Lead, Glass, Oil, and Colour Merchants, beg to inform Plumbers, Builders, and others, that they may be supplied with goods of best quality at following prices for cash, delivered free to any waggon office, wharf, or railway station in London.

	£. s.
Sheet Lead and Pipe, at	19 10 per Ton.
Genuine White Lead	26 0 ditto.
2nds ditto	24 0 ditto.
3rds ditto	22 0 ditto.
Pan Closet, complete, white basin	23s.
Sunk ivory, or porcelain handle, ditto, complete, blue basin, &c.	42
2½ Lift Pump, on plank	80
3 ditto ditto	90
Crate Crown Glass, 18 T., nett	26

All Goods warranted of best manufacture. Old Lead bought, sold, or exchanged.

Credit given on receipt of satisfactory references.

WORCESTER ENCAUSTIC TILES.—Specimens of these Tiles in great variety, both glazed and unglazed, may be seen, and every information obtained at the London Agents, Messrs. GREIVE and GRELLIER, Marble Wharf, Belvidere-road, near Waterloo-bridge, and Mr. SAMUEL CUNDY, Belgrave Wharf, Pimlico.

N.B. The price has been very much reduced since March last. Orders executed as above, or at the works of Messrs. F. ST. JOHN G. BARR and Co., Palace-row, Worcester.

TO BRICK AND TILE MAKERS.

THE AINSLIE BRICK AND TILE MACHINE COMPANY (James Smith, Esq., of Deanston, chairman), invite attention to their IMPROVED BRICK and TILE MACHINES, which are to be seen at work at Alperton, and at the Company's office, 193 A, Piccadilly, from 10 A.M. to 5 P.M. Mr. Robert Scrivener, who has been appointed manager in the room of Mr. John Ainslie, will shew the Machines at the works at Alperton, which is within a mile of the Sudbury-station of the London and North Western Railway, and two miles of the Ealing-station of the Great Western Railway; also at the Polytechnic Institution, Regent-street, London.—All communications to be addressed to Mr. WILLIAM GORDON, Secretary, at the office of the Company, London, 193 A, Piccadilly, March 1, 1847.

These Machines may also be seen at Mr. SLIGHT'S, Leith-walk, Edinburgh; Mr. LAWRENCE HILL, 135, Buchanan-street, Glasgow; Mr. ROBERT CHARLES, Mill-hill, Leeds; Messrs. PENNY and FINCH, Penkridge, Staffordshire; and Messrs. DRUMMOND and SON, Dublin.

THE HOPE FRIENDLY SOCIETY of PAINTERS, GLAZIERS, &c., now held at the WHITE HORSE, Castle-street East, Oxford Market.

The Members of the above Society beg respectfully to inform the Trade in general, that they have REMOVED from the Coach and Horses, Great Marlborough-street, to the above premises, where employers, on application, may be supplied with men.

THE WORKING MAN MAINTAINED IN HIS TRUE POSITION BY THE

NATIONAL FRIENDLY SOCIETY.

TRUSTEES.

Luke J. Hansard, Esq., Southampton-street, Bloomsbury.
Henry C. Holland, Esq., Duke-street, Bloomsbury.
Edward Lomax, Esq., C. E., Leonard Villa, St. John's Wood.

CONSULTING SURGEON.

T. Bartlett, Esq., 36, Chancery-lane.

This Society enables the industrious classes to avoid the degradation of pauperism.

A man, aged 21, may secure £50, at his death, to his wife or children, by paying 1s. 7d. monthly.

Or, £10 a year when he is 55, as a provision in old age, by paying 2s. 8d. monthly.

Or, £100, when he is 52, or all the payments to be returned if he dies before, by paying 3s. 2d. monthly.

Or, 10s. 6d. weekly, when disabled, from disease or accident, with the highest medical aid and medicines, by paying 1s. 9½d. monthly. In similar proportion for other ages.

Thirty Medical Attendants are appointed for the Metropolis.

Periodical Divisions of Surplus Funds, among the Members, and many other advantages.

Prospectuses, giving full particulars, gratis, and Rules, at the Chief Office, 21, Red Lion-square, Holborn.

By order of the Board,
W. J. REYNOLDS, Secretary.

*** Prospectuses sent by post on receipt of a penny stamp.

SEWERS, MIDDLESEX—HOLBORN AND FINSBURY DIVISIONS.

NOTICE IS HEREBY GIVEN, that a Court of Sewers for Holborn and Finsbury Divisions, in the County of Middlesex, will be holden at the Sewers' Office, No. 7, Hatton Garden, on FRIDAY, the 30th day of July, 1847, at Two o'clock in the afternoon precisely.

JOSEPH UNWIN, Summoner and Cryer.

Sewers' Office, for Holborn and Finsbury Divisions, &c. No. 7, Hatton Garden.

TO BUILDERS AND OTHERS,

Interested in buildings, or in ground for building upon, within the District of Holborn and Finsbury Divisions, the Parish of St. Leonard, Shoreditch, and the Liberty of Norton Falgate, in the County of Middlesex, and the borders and confines of the same.

THE Commissioners of Sewers for the above Limits, DO HEREBY GIVE NOTICE, that previous to making any new sewer in any street, lane, or public way, or in any part intended to become a street, lane, or public way, or to carry or drain off water from any house, building, yard, or ground, into any sewer under their management, or within their jurisdiction, application must be made by petition, the form of which may be had at their office; to which must be attached, a plan of the intended line of sewer; and which must be constructed conformably with their regulations.

And, in order to prevent the serious evils and inconveniences that must arise from ground proposed to be built upon being excavated to too great a depth, the Commissioners have directed that, upon application being made at their office, previous to the excavation of such ground, information shall be given as to the lowest depth at which the same can be drained.

And the Commissioners do also give Notice, that whenever the lowest floors or pavements of buildings shall have been laid so low as not to admit of their being drained with a proper current, they will not allow any sewers, or drains into sewers, to be made for the service of such buildings: and further, that no buildings or erections of any kind will be permitted to be made upon or over any sewer.

All communications made with any public sewer, without previous application, as aforesaid, will be stopped out; and the parties making the same will subject themselves to a fine.—By the Court,

STABLE and LUSH, Clerks.

*** The public is also informed, that all rates imposed by the said Commissioners are to be paid by the tenant, and allowed by the landlord out of the rent, except where the tenant, by special covenant or agreement, is bound to defray the same.

THE Commissioners of Sewers for the City and Liberty of Westminster, and part of the County of Middlesex, HEREBY GIVE NOTICE, that by an Act of Parliament made and passed in the session of Parliament holden in the 10th and 11th years of the reign of her present Majesty, chapter 70 (local and personal), intituled, "An Act to explain and amend the laws of Sewers relating to the City and Liberty of Westminster, and part of the County of Middlesex," provision is made for the more effectually draining houses and property; and with a view thereto it is enacted, that where houses built before or after the passing of the said Act (2nd July, 1847), shall not be drained to the satisfaction of the Commissioners of Sewers, and if there shall be a sewer within 100 feet of any front of the building or of any inclosure about the same, it shall be lawful for the Commissioners to order the owners or occupiers, at their expense, to drain such house, by continuing the sewer along their frontage, and by making a drain to lead thereto; and if there be already a sewer in front, adapted to the drainage, then, that a covered drain into it shall be made, as the Commissioners shall direct, and that the parties shall contribute to the expense of the original construction of the sewer, if built within thirty-five years before the passing of the said Act. And by the said Act it is declared that no drains shall be made without first giving notice to the Commissioners, who are to regulate the construction thereof. And it is by the said Act further provided, that all drains and water-courses, as well within as without houses and other property, shall be cleansed and repaired by and at the cost of the owners or occupiers. The Commissioners are by the Act fully empowered to punish by fines and penalties any persons who may contravene the Act; and it is particularly required that all persons will proceed to comply with these regulations.

An officer of the Commissioners will be in attendance at the office, No. 1, Greek-street, Soho, from 9 in the morning until 4 in the afternoon, every day (Sunday excepted), when every information will be given to parties to assist them in complying with the provisions of the Act.—By order of the Court,

LEWIS C. HERTSLET, Clerk.

TO BUILDERS, OWNERS OF HOUSES AND PROPERTY, AND OTHERS.

THE Commissioners of Sewers for the City and Liberty of Westminster, and part of the County of Middlesex, HEREBY GIVE NOTICE, that, by an Act of Parliament made and passed in the session of Parliament holden in the 10th and 11th years of the reign of her present Majesty, chap. 70 (local and personal), intituled, "An Act to explain and amend the Laws of Sewers relating to the City and Liberty of Westminster, and part of the County of Middlesex," it is enacted (sec. 4), that after the passing of that Act (2 July, 1847), it shall not be lawful to build any house (and the word "house" is thereby declared to comprise every species of building) within the limits of any level division or district formed, or thereafter formed, within the limits of the said Commission, unless a sewer to carry off the drainage thereof be first constructed to the satisfaction of the Commissioners of Sewers, of such material, of such size, at such level, and with such fall, as they shall direct, which sewer shall lead to and communicate with such other sewer as the Commissioners shall direct; provided that, if there shall be already a sewer sufficiently near, in the judgment of the Commissioners, to any such premises, then a drain shall be made to lead from such house into such existing sewer: and it is thereby declared that the expense of building such sewer or drain shall in all cases be borne by the owner of such house, unless the Commissioners shall think that a portion of the expense of the sewer (but in no case a drain) should be borne by the level in which such sewer shall be situate: And further it is by the said Act enacted, that if any person shall proceed to build any house in contravention of the said provisions, the Commissioners are authorised to punish him, and any person employed by him, by fine, amercisement, or otherwise, as in the said act is directed; but it is thereby provided that no person shall be required to expend a greater sum for such works than after the rate of 20s. per foot according to the extent of his frontage, and that any house wholly unconnected with any public sewer, and at a distance of not less than 300 feet from any public road or other house, shall not be liable to make such sewer or drain, unless such sewer or drain shall be required by the presentment of a jury: And further take notice, that the said Commissioners of Sewers hereby strictly require all persons to comply with the provisions of the said Act, and with this view persons interested are requested to attend at the Office of the Commissioners, No. 1, Greek-street, Soho, between the hours of nine in the morning and four in the afternoon, where a map and plan of the sewers under the jurisdiction of the Commissioners may be seen, and the form of sewers and drains required, ascertained, and a form of the written request required may be obtained, and all further information and assistance given: And further take notice, that parties are requested forty-eight hours at least before they shall so attend at the said office to send, by post or otherwise, to the Surveyor of the Commissioners at the said office, a description of the house or erection intended to be built, with the mode in which it is proposed to join any sewer, or provide for the drainage of such premises.

By order of the Court,

LEWIS C. HERTSLET, Clerk.

SOVEREIGN LIFE ASSURANCE COMPANY, No. 5, St. James-street, London.

TRUSTEES.

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Assurances on the lives of persons in every station of life and every part of the world, granted on a plan which combines the utmost amount of benefit to the families of the assured AT DEATH, with every attainable advantage DURING LIFE, which the system of Life Assurance is capable of affording.

ANNUITIES, ENDOWMENTS, ADVANCES, and LOANS, on liberal terms.

Prospectuses, Forms of Proposal, and every information, may be had on application, either personally or by letter, at the Company's Offices.

THE PATENT TORRENT WATER CLOSET,

AUSTIN'S PATENT,

FOR GENERAL AND UNIVERSAL ADOPTION, IN LIEU OF CESSPOOLS.

THE recent investigations, under the sanction of Government, have shewn the absolute necessity for the universal adoption of Water Closets, in lieu of Cesspools, as essential to the health, comfort, and economy of all classes.

An efficient and economical apparatus was, however, still wanting; the present defective and complicated construction being (as is too well known) the source of constant annoyance and expense to the higher and middle classes, and totally inapplicable to the tenements of the poor.

"The PATENT TORRENT WATER CLOSET" has been designed to supply this deficiency, and possesses the following decided advantages:—

1. SIMPLICITY.—Its construction is so perfectly free from complication, as to render it almost impossible to be disordered or deranged.

2. GREAT ECONOMY and REGULARITY in the Consumption of WATER.—From the construction of the "head" or "measure," a certain quantity of water only can be discharged each time the closet is made use of,—that is to say, the contents of the measure only can be used. When the person takes the seat, a cock is acted upon which allows the measure to fill with water; and when the person leaves the seat the cock is again acted upon, and the result is, that the water contained in the measure is instantly discharged into the basin.

3. The TORRENT, or Momentary Rush of WATER.—This is produced by having a pipe of large area to convey the water from the measure to the basin, instead of the small pipe now made use of; it must therefore be evident that the water will descend in a body with great rapidity, consequently with great effect.

4. THOROUGH CLEANSING.—The rush or torrent of water just described carries all before it, completely purging the basin from all impurities.

5. NO CISTERN is required.—The Closet is so constructed, that should it become the custom for Water Companies to maintain a constant supply, it will only be necessary to connect the "head" of the apparatus with the service pipe, as it is constructed of sufficient strength to resist the pressure.

6. NO SEPARATE CISTERN is required.—Should the intermittent system be continued, cisterns would of course be indispensable; but one cistern would still supply an unlimited number of the Torrent Water Closets, as a pipe for the conveyance of the water is all that is required, cistern valves being useless.

7. NO SEPARATE TRAP is required.—A syphon trap is formed with the basin, and its construction is such as to effectually prevent the escape of effluvia.

8. IT IS SELF-ACTING.—This is absolutely essential for the proper working of a Water Closet in the poorer class of houses, or where neglect or inattention may be apprehended.

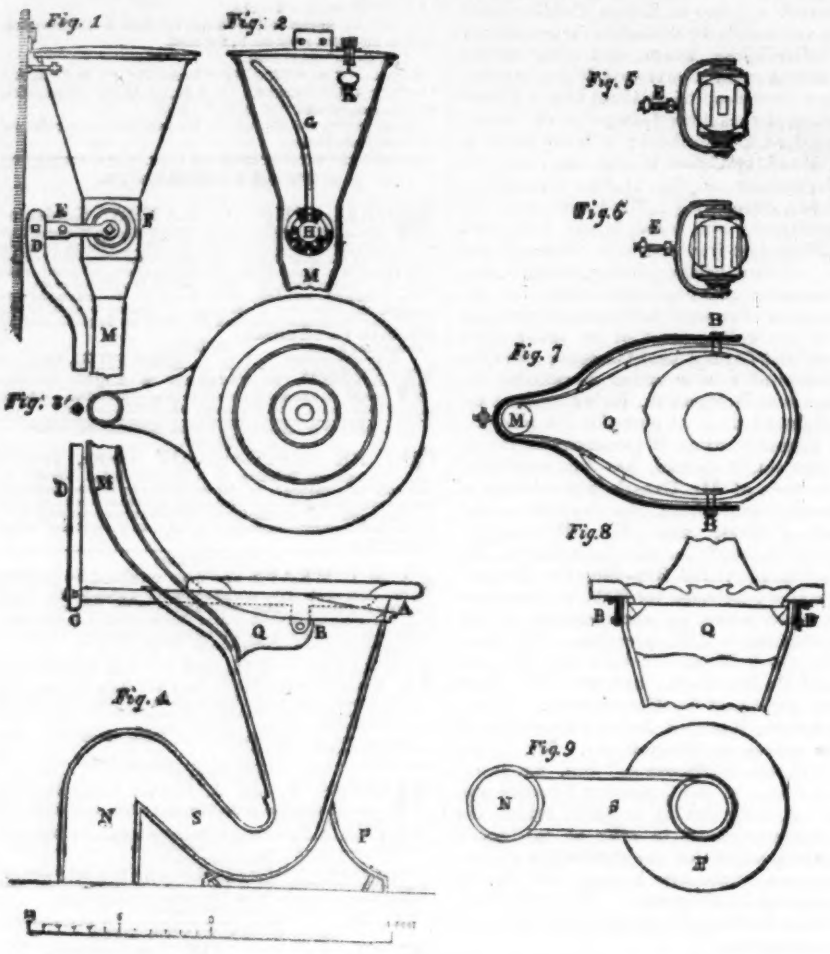
9. ECONOMY.—The cost is small compared with the ordinary complicated and inefficient apparatus.

10. The EXPENSE OF FIXING, and the small space in which it may be placed, are the LEAST POSSIBLE.—The basin is formed of strong glazed earthenware, with a strong substantial foot or base, which enables it to be fixed firmly by means of screws; and it is quite unnecessary to make use of the usual wood casing, as there is no fear of any derangement of its parts, and it may present an ornamental appearance, with a ready means of being kept perfectly clean, and all secretion of dust or dirt entirely avoided.

It may be placed in a corner, and thus economy of space is effected to the greatest possible extent.

FOR THE COLONIES it is a most valuable invention, and wherever used will much tend to prevent the congregation of the loathsome insects that are at present found in such situations.

FOR RAILWAY STATIONS it is invaluable, for the present closets are a continual trouble and expense; they are required to be self-acting, but to render them so an endless number of wires and cranks have to be made use of, and consequently, continued derangement is the result; add to this, the constant obstruction in the pipes, owing to the force of water being inadequate to remove such substances as are introduced by the Companies' servants and others; all these objections, it is confidently asserted, are obviated by the use of the Patent Torrent Water Closet.



DESCRIPTION OF DIAGRAMS.

Fig. 1.—The measure or head, shewing entrance of supply-pipe at top, and cock, &c., at bottom.
Fig. 2.—Section of the measure and cock, shewing its position when open for the water to come in.
Fig. 3.—Plan of top of seat, of torrent-pipe M, and action-rod D.
Fig. 4.—Section from back to front of seat, basin, bottom of torrent-pipe M, spreader Q, and shewing lever C under seat, and lower end of action-rod D, to let water in and cut it off.
Fig. 5.—Top of cock, shewing openings to let in water, and the bridle lever by which it is moved.
Fig. 6.—Bottom of cock, shewing openings to let out water, and bridle lever.
Fig. 7.—Plan of top, &c., of basin under seat, and shewing the lever, which is fixed to the seat, to lift the action-rod.
Fig. 8.—Section from side to side of seat, and top of basin, with front of lower part of spreader.
Fig. 9.—Plan of foot P, of basin, and syphon.

MODE OF ACTION.

When a person takes the seat, the front A is pressed down, moving on the centre B, and elevating the end of the lever C, and the rod D directing the bridle lever E, which opens the cock F;—the measure is then filled with water by the pipe G, passing through the cock, as shewn at H, and as the measure fills, the water rises and stops the air-valve K, and no more water can enter, nor can any overflow.

On leaving the seat the front A rises by the weight of the lever C, and the rod D, which, with the lever E, falls and shuts the cock from the admission of water, and opens it at bottom for letting it out into the torrent pipe M, from which it is discharged by the spreader Q, which directs the water to cleanse the basin, and carry off every thing through the syphon S, and the leg N. The lowest part of the syphon is not under the centre of the basin, but so much on one side towards the leg N as to direct every drop of water with its full force in that direction. The leg N is made considerably larger than the smallest part of the syphon S, to prevent the water driving the air in the soil-pipe, connected with N, before it. The smallest part of the syphon is within sight, so that any thing improperly introduced may be removed.

The syphon remaining full of water to the height of the point between N and S, forms a trap to prevent air rising from the soil-pipe through the leg N to the basin.

Extract from the Report of the Committee to the HEALTH OF TOWNS' ASSOCIATION, *to the Members of the Association, on* LORD LINCOLN'S *Sewerage, Drainage, &c., of Towns' Bill.—(Vide Report, page* 70.)

"It is also proved that a proper Water-Closet is far more economical than the Cesspool; but in urging the introduction of Water-Closets for the poorest dwellings, it is not intended to recommend the use of the apparatus now generally applied in superior houses, with its complications of cranks and wires, which are always getting out of order, and constantly leading to expense and trouble.

There are various simple means of applying water to this purpose, as shewn in the evidence of Mr. Loudon, Mr. Foden, Mr. Smith of Deanston, and others. But the apparatus invented by Mr. Austin appears to possess all the requisites for general adoption. It cannot be put out of order, and is self-acting; it requires no cistern; it acts as a flushing apparatus each time, by providing a great momentary rush of water, whereby the drains are effectually cleared, and all effluvium removed."

TESTIMONIAL FROM MR. JOSEPH QUICK, ENGINEER TO THE SOUTHWARK AND VAUXHALL WATER COMPANY.

Southwark and Vauxhall Water Company,
Office, Sumner-street, Southwark, 16th January, 1847.

DEAR SIR,—It affords me great pleasure in bearing testimony to the many advantages combined in Austin's "Patent Torrent Water Closet." 1st. As to its applicability to every description of dwelling or establishment; 2nd. Its efficiency with a small quantity of water, compared with any apparatus now in use; 3rd. One supply cistern being sufficient for any number of closets; 4th. Its great simplicity, and the little chance of any derangement taking place in any part of the apparatus; 5th. The great difference in the expense of the first cost, and the amount in fixing.

You are aware, I am frequently applied to by builders and others, to suggest the best and simplest means of laying on supplies of water, to houses and various establishments, and I am often told, if it were not for the expense and inconvenience of erecting so many cisterns, and keeping in order the complicated machinery now in use, we would have several more closets put up; but we must wait till some less expensive method is introduced.

Mr. Austin's invention, I am pleased to see, quite removes these objections, and I have no doubt the public, both for convenience and in a sanitary point of view, will avail themselves as much as possible of his valuable invention.—I remain, dear Sir, yours faithfully,

Mr. JOS. E. DOWSON — J. QUICK, Engineer.

To be obtained of the Sole Manufacturers,

MESSRS. DOWSON, 69, WELBECK-STREET, CAVENDISH-SQUARE,

And also at their Iron and Brass Foundry, 5, Seymour-place, Bryanston-square, London.

DOWSON'S EARTHEN PIPES,

GLAZED INSIDE,

FOR DRAINS, SOIL PIPES, AND THE CONVEYANCE OF PURE WATER.

These pipes are superior to metal for the conveyance of WATER, as they are entirely free from corrosion.—And for the same reason, as well as for the lowness of their price, are well adapted for SOIL and DRAIN PIPES.

The present mode of forming HOUSE DRAINS of bricks is extremely bad—such drains have been aptly termed "ELONGATED CESSPOOLS"—from the largeness of their size they are never flushed, consequently no force is exerted to drive the foul matter to the sewer, but it slowly moves along, saturating the bricks with the liquid portion and largely depositing the more solid particles, which is greatly accelerated by the defective surfaces of the bricks and the mortar joints, so that comparatively very little passes through the outlet. The bricks, from constant saturation, soon become destroyed, and the building seriously injured, not only by the foundation being always wet, but also by the depredations of rats, which are enabled with ease to come from the sewers, through the rotten and crumbling sides of the drains, and perforate the floors.

Very recently an instance of such destruction came under the notice of Messrs. DOWSON, and the evil had so far advanced that one of the piers of the house had given away, and considerable outlay was necessary to render the habitation safe and tenantable.

But PECUNIARY LOSS is not the only evil resulting from the use of brick drains—LOSS OF HEALTH to a fearful extent, is also one of the consequences of the existence of these "ELONGATED CESSPOOLS," the foulest and most poisonous exhalations proceed from them, and from the foundations they have allowed to become saturated.

THE EARTHEN PIPES are a certain preventative against all these evils. They admit of being constantly flushed, they are free from corrosion, and are impervious to liquid.

Messrs. DOWSON beg also to intimate that they are the manufacturers of Cundy's much-approved Patent Stove; and also undertake IRON AND BRASS CASTINGS OF ANY MAGNITUDE and Smith's Work in all its Branches, and beg to call the attention of Architects and Builders to their extensive collection of Patterns for Ornamental Ironwork.

A NEAT SELECTION OF MARBLE CHIMNEY PIECES, TESSELATED PAVEMENTS, &c.